A REVISION OF THE THEREVINE STILETTO-FLIES (DIPTERA : THEREVIDAE) OF THE ETHIOPIAN REGION

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A REVISION OF THE THEREVINE STILETTO-FLIES (DIPTERA : THEREVIDAE) OF THE ETHIOPIAN REGION

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SYNOPSIS

A detailed revision is provided of the Therevinae of the Ethiopian Region, based on a study of about 830 specimens representing 64 species. Nine genera are recognized: *Schoutedenomyia* Kröber (10 species in tropical Africa, of which 6 are new), *Stenopomyia* gen. n. (13 species in Madagascar, of which 12 are new), *Stenosathe* gen. n. (2 species in Natal and Rhodesia, of which the Rhodesian species is new), *Irwiniella* gen. n. (15 species in continental Africa, Madagascar, Rodriguez I., Sokotra and Cape Verde Is.; 6 of the species are new), *Neophycus* Kröber (one species in Cameroun and Nigeria), *Neothereva* Kröber (2 species in Mauritania and South West Africa, of which the South West African species is new), *Pseudothereva* gen. n. (4 species in eastern and southern Africa, of which one is new), *Thereva* Latreille (14 species in continental Africa; 7 species and 2 subspecies are new) and *Caenophthalmus* Kröber (5 species in Cape Province, of which 4 are new). All existing types have been examined, 9 lectotypes are newly designated, and 11 new specific synonyms are established. A diagnostic key to the suprageneric and generic categories is presented, and a key to the species is given under each genus.

INTRODUCTION

The Dipterous family Therevidae is greatly in need of revision in all zoogeographical regions. Inspired by the plans for a Catalogue of the Diptera of the Ethiopian

Region, the present author has started a revision of the Therevidae of that region, of which the first part, dealing with the *Xestomyza*-group, has recently been published (Lyneborg, 1972). A subfamily and a tribal division of the family will be proposed by Irwin & Lyneborg (in prep.), in a revision of the North American genera of Therevidae. The two subfamilies, the Phycinae and the Therevinae, are both represented in the Ethiopian region, and the present paper is a revision of the last-mentioned subfamily. Two tribes of Phycinae are represented in the Ethiopian region: one of these is formed by the above-mentioned *Xestomyza*-group, which will be formally termed the Xestomyzini; the second tribe is the Phycini, which will be revised later.

The aim of any taxonomist must be to recognize and define the internal phylogenetic hierarchy within the group under treatment. In a family like the Therevidae, which is of great antiquity and has a world-wide distribution with several widely-separated centres of speciation, success in achieving this aim is largely dependent on the degree of certainty with which the supraspecific groups are established as monophyletic unities. In the paper by Irwin & Lyneborg (in prep.), the authors have attempted to arrange the North American species of Therevidae into clearly monophyletic groups, based on synapomorphic characters, and have given these groups generic rank. This has resulted in the erection of a dozen or more new genera, but there was no possibility of avoiding this if a strictly binomial nomenclature was to be retained. Future revision of Therevid fauna of other regions will undoubtedly result in the erection of a large number of further new genera.

In the present paper the author has followed the same aims, that is to say, to establish truly monophyletic genera. The only exception is the genus *Thereva*, which is certainly polyphyletic, as the *analis*- and *turneri*-groups are probably of different origin from the *seminitida*-group. However, the problems concerning the status of *Thereva* can best be elucidated in a revision of the Palaearctic fauna.

A total of about 830 specimens has been examined. The material has been accumulated from a large number of museums and also from some private collections. The depository of all specimens is given in abbreviated form after each record. The abbreviations used are as follows.

AMNH	American Museum of Natural History, New York, U.S.A.
BMNH	British Museum (Natural History), London, England.
CAS	California Academy of Sciences, San Francisco, U.S.A.
CM	University Museum of Zoology, Cambridge, England.
CNC	Canadian National Collection, Ottawa, Canada.
DJG	Collection of D. J. Greathead, Welwyn Garden City, Hertfordshire, England.
DM	Durban Museum, Durban, South Africa.
IFAN	Institut Fondamental d'Afrique Noire, Dakar, Senegal.
IPNB	Institut des Parcs Nationaux, Brussels, Belgium.
IRSNB	Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium.
MB	Hungarian National Museum, Budapest, Hungary.
MCM	Museo Civico di Storia Naturale, Milan, Italy.
MCT	Musée Royal de l'Afrique Centrale, Tervuren, Belgium.
MEI	Collection of Michael E. Irwin, Urbana, Illinois, U.S.A.

MP	Muséum National d'Histoire Naturelle, Paris, France.
NM	Natal Museum, Pietermaritzburg, South Africa.
NMB	Naturhistorisches Museum, Basle, Switzerland.
NMW	Naturhistorisches Museum, Vienna, Austria.
NRS	Naturhistoriska Riksmuseum, Stockholm, Sweden.
SAM	South African Museum, Cape Town, South Africa.
SMF	Senckenberg Museum, Frankfurt, Germany.
SMNS	Staatliches Museum für Naturkunde in Stuttgart, Ludwigsburg, Germany.
TM	Transvaal Museum, Pretoria, South Africa.
USNM	United States National Museum, Washington, D.C., U.S.A.
WM	State Museum, Windhoek, S.W. Africa.
ZIH	Zoologisches Institut, Halle (Saale), Germany.
ZIL	Universitetets Zoologiska Institution, Lund, Sweden.
ZMB	Museum für Naturkunde der Humboldt-Universität, Berlin, Germany.
ZMC	Universitetets Zoologiske Museum, Copenhagen, Denmark.
ZMH	Zoological Museum, Helsinki, Finland.
ZSM	Zoologisches Sammlung des Bayerischen Staates, Munich, Germany.

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CLASSIFICATION AND PHYLOGENY

Until now the family Therevidae has had no internal hierarchy, and the characters used for separating genera were highly convergent and produced an unnatural classification containing many polyphyletic taxa at the generic level. Obvious examples are genera like *Thereva* and *Psilocephala* Zetterstedt, to which a large number of species from all zoogeographical regions had been assigned. Irwin & Lyneborg (in prep.) have presented a monophyletic classification of the North

American genera of Therevidae and have also defined two subfamilies, the Phycinae and the Therevinae. From among the results obtained, it is worth mentioning that *Thereva* in a monophyletic sense is restricted to the Nearctic and Palaearctic regions, with a few species in the Ethiopian and Oriental regions, while *Psilocephala* in a monophyletic sense is restricted to two boreal species, one in North America and one in North Europe. The subfamily Therevinae is so large and complex that a tribal division has been delayed until more information about the composition of the fauna in other regions, especially the Australian region, can be obtained and evaluated.

Compared with the North American fauna of Therevinae, the Ethiopian Therevinae are a much more uniform group. The Ethiopian Therevinae contain no genera with ventrally fused male gonocoxites, or with a more or less strongly sclerotized dorsal bridge between aedeagus and basal part of dorsal gonocoxal process, or with a reduced distal end of dorsal gonocoxal process. These three characters of the male terminalia are obvious apomorphic characters.

This indicates that the therevine genera of the Ethiopian region are related to that group of genera having more plesiomorphic characters in the male terminalia, which is represented by many genera in the Palaearctic region as well as in the Nearctic and Neotropical regions. However, with present knowledge it is impossible to recognize any sister-group relationships between genera or groups of genera in the Ethiopian region and genera or groups of genera in other regions.

The phylogenetic relationships between the Ethiopian genera of Therevinae are discussed in detail under each genus, and the reader is referred to the remarks after each generic description.

DISTRIBUTION

The distribution of the therevine genera of the Ethiopian region can be briefly summarized as follows. *Schoutedenomyia* seems to be restricted to the tropical parts of continental Africa. It is represented by ten species, and ranges from Nigeria and Kenya in the north through the Congo basin to Mozambique and Botswana in the south. All known species seem to occur at inland localities; none shows any association with coastal beaches. *Stenopomyia* is endemic to Madagascar and is represented there by 13 species. At least some of these are associated with biotopes near sea-coasts, but more exact information is needed. Apparently *Stenopomyia* does not occur in the Oriental region. The sister-group of *Stenopomyia* may be the small genus *Stenosathe*, represented by two species in Natal and Rhodesia.

Irwiniella is by far the most widely distributed genus in the Ethiopian region, and is also well-represented in the Oriental region. Fifteen Ethiopian species have been placed in this genus. Two species are found on the Cape Verde Is., two on Rodriguez I. east of Mauritius, three on Madagascar, and the rest occur on continental Africa. Most species of *Irwiniella* appear to be associated with coastal beaches, but some are also found at inland localities. The monobasic genus *Neophycus* is known only from Cameroun and Nigeria and is probably restricted to tropical Africa.

Neothereva is one of those genera overlapping the Ethiopian and Palaearctic regions, as it is represented by several species in and around the Saharan area. One species of *Neothereva* occurs in South West Africa.

Pseudothereva has a disjunct distribution, as three species occur in the highlands of Ethiopia and Kenya, while the fourth species, *parviseta*, is known only from the province of Pondoland in Natal, South Africa.

Thereva is restricted to the continental part of the region. As mentioned above, the Ethiopian species of this genus fall in three distinct groups, of which the *analis*- and *turneri*-groups will probably prove to be distinct genera eventually. The third group, the *seminitida*-group, represents *Thereva* in its most restricted sense. This group is closely related to the Holarctic stock of *Thereva*-species, and has an afroalpine distribution in Africa with one exception, *capensis*, which occurs in the Cape area. The *analis*-group is distributed from Kenya and Zaire in the north to Cape province in the south, while the *turneri*-group, represented by three species, is restricted to Cape province.

Caenophthalmus is a small genus of five species endemic to Cape province.

MORPHOLOGY

Head. Compound eyes of males touching or almost touching for a longer or shorter distance (Text-figs 1, 71, 183), but rather widely separated in some species of *Stenopomyia* (Text-figs 69, 73) and in some *Neothereva*. Facets of almost equal size, or upper facets distinctly enlarged. Female frons of very varying width: narrow in some species of *Stenopomyia* (Text-figs 68, 70), moderately wide in *Schoutedenomyia* (Text-figs 2, 3, 5, 7, 9, 11) and *Irwiniella* (Text-figs 184–188), very wide in *Thereva* (Text-figs 351, 352, 357, 358, 361–364) and in *Neothereva* (Text-figs 320, 321). The width of the frons largely depends on the degree to which the eye-margins diverge from upper frons down to antennal level. The frons (frontal triangle) of holoptic males may be more or less shining, as in some species of *Schoutedenomyia* (Text-fig. 1) and *Stenopomyia*, or may be entirely tomentose, in which case it is often darker tomentose on upper part than on lower part. Male frons bare in *Schoutedenomyia*, *Stenopomyia* and in some species of *Stenosathe* and *Irwiniella*, haired in the rest. Female frons with a very varying pattern, often consisting of areas of differently coloured tomentum, but also including non-tomentose shining areas that form calli in species of *Thereva* (Text-figs 362–364) or cover most of frons in *Schoutedenomyia* (Text-figs 2, 3) and *Pseudothereva* (Text-figs 330–332). The female frons usually has a greater or smaller number of hairs, and is only entirely bare in *Schoutedenomyia*.

In anterior view the heads show conspicious intergeneric differences in the degree of divergence of the eye-margins from antennal level down to lower corner of eyes. A term, the facial index, has been introduced for the ratio between the distance across the face from lower eye-corner to lower eye-corner and the total height of the head. The lowest facial indices are found in *Stenopomyia*, where they vary between 0·32 and 0·47 (cf. Text-figs 2, 3, 5, 7, 9, 11) while the highest indices (over 1·00) occur in *Thereva* (Text-figs 361–364). *Irwiniella*, *Stenosathe* and *Pseudothereva* have values between these extremes, but there is only slight overlapping (see the generic descriptions). The lateral area of the face is bare or haired, and this character is usually a good generic character. However, it breaks down in *Irwiniella*, where *semiargentea* has hairs on the face whilst a closely related species, *lindbergi*, has a bare face. The genae are very narrow and hardly visible in lateral view in *Stenopomyia* (Text-figs 72, 74), whereas in genera like *Schoutedenomyia* (Text-figs 4, 6, 8, 10, 12) and *Irwiniella* (Text-figs 183–188) they are more variable in shape, either narrow and ridge-shaped or wider and more evenly curved. In *Pseudothereva* (Text-figs 330–332) and *Thereva* (Text-figs 351, 357, 364) the genae are very wide, corresponding to the more strongly diverging facial margins. The pubescence of the genae also shows variation.

The morphology of the proboscis has not been studied. There is not much variation in its external shape in the genera under treatment. However, in some species of *Thereva*, there is a tendency towards a reduction of the proboscis, and in *Caenophthalmus* the proboscis is distinctly longer and more slender than usual in the Therevinae, where the labellae are normally broad and large. The palpus is haired, and one-segmented and vermiform in most genera; only in *Schoutedenomyia* (Text-fig. 19) does an obvious two-segmented palpus occur, but the segmentation has not been studied in detail in most species (dissection necessary, but material sparse).

The occiput is always clearly seen in lateral view. It bears longer or shorter soft pubescence, and additional stronger bristles. The bristles forming a row along the upper post-ocular margin are termed the post-ocular setae. Below these there is usually a number of more irregularly arranged occipital setae. However, it is not always easy to separate these two groups of setae. The number of setae varies greatly in some genera, and often there are differences between the sexes.

The antennae play an important rôle in the taxonomy of the Therevinae, and are illustrated for almost all the species included in the present revision. The antennae are always slender in the genera under consideration. Three antennal segments, third segment with a two-segmented style that terminates in a tiny spine. Third antennal segment in *Caenophthalmus* (Text-fig. 440) with a secondary basal constriction. Ratio of first and third antennal segments very different, with extremes in *Schoutedenomyia longeantennata* (Text-fig. 12) and in *Neophycus*. Antennal segment 1 with hairs of varying lengths. Segment 2 with a ring of short hairs, and segment 3 often with some hairs near base. Ratio of style to third segment proper strongly variable and of generic importance. The ratio of the various sections of the style also shows considerable variation.

Thorax. Notopleural setae, three or more pairs. Supraalar setae, one or two pairs. Postalar setae, one pair. Dorsocentral setae absent or, if present, one to two pairs. Scutellar setae, one or two pairs, but not always constant. Mesonotum with a variable pattern consisting of tomentose and more shining areas. Mesonotal pile variable in length. Pleura more or less pilose, and the occurrence of pile on sternopleura particularly important for the separation of genera. Prosternum with pile on whole surface, or bare on the central area as in *Schoutedenomyia*, *Stenopomyia* and *Stenosathe pilosa*.

Wings. Vein R_1 always bare. Cell R_4 showing considerable diversity in shape. *Stenopomyia* (Text-figs 87, 88) and some *Schoutedenomyia* (Text-fig. 26) with a long and narrow cell R_4, *Irwiniella* with the cell moderately wide, and *Thereva* with cell R_4 very wide towards apex. Cell M_3 may be open, closed at wing-margin or petiolate. Wing-colour hyaline, often with a greyish or brownish tinge, sometimes more whitish as in *Neothereva*, very rarely with a pattern of indistinct bands, but veins often partly surrounded by darker infuscations.

Legs. Relatively long and slender, the hind legs longer than the others, in some *Schoutedenomyia* the fore legs (tibia and metatarsus) slightly incrassate (Text-fig. 23). Anterior coxae with one to several setae on anterior surface in addition to the normal pile. Anterior and mid coxae bare on posterior surface in *Schoutedenomyia*, *Stenopomyia* and *Stenosathe*, with long pile on posterior surface in the other genera. Femora often with one to several anteroventral setae; these setae short in the three genera just mentioned, longer in the others. Tibia 1 always without anteroventral setae; the setae in anterodorsal, posterodorsal and posteroventral position usually well-developed and longer than tibial diameter, only shorter than tibial diameter in *Schoutedenomyia* (Text-figs 20–23). Tibia 2 and 3 with setae in all four positions, but posteroventral setae of tibia 3 often more or less reduced.

Abdomen. Always 8 well-developed pregenital segments. Shape of abdomen rather narrow and parallel-sided in *Schoutedenomyia* (Text-figs 27, 25) and *Stenopomyia*, broader and more tapering in *Irwiniella* and especially in *Thereva*. Abdomen often entirely tomentose in males or with a pattern of darker bands on the first segments. Female abdomen usually with a pattern formed by shining bands and tomentose areas. Abdominal pile of very variable lengths.

Male terminalia. Ground-plan relatively uniform in all Ethiopian Therevinae. Last pregenital segment (segment 8) formed by tergite 8, which is strongly constricted at middle,

and a less modified sternite 8. Both sclerites are illustrated for most species. Epandrium enclosing the rest of the genitalia and always dorsal in position. Shape of epandrium very variable, as the posterior margin is often modified, especially in *Stenopomyia*. In this incision on the posterior margin of the epandrium are situated the paired cerci, and ventrally under these is the so-called paraproct. This continues anteriorly into an intersegmental membrane which is situated close beneath the epandrium and is more or less distinctly attached to the anterior margin of the aedeagus (=the distal edge of the dorsal apodeme). The intersegmental membrane may be completely membraneous, or with a median sclerotisation, or with lateral sclerotisations as in strict *Thereva*. Gonocoxites always free ventrally in all Ethiopian Therevinae. Hypandrium present, but very reduced, and placed anteriorly between the bases of the gonocoxites. Gonocoxites bearing a dorsal gonocoxal process along their dorsal edge. The dorsal gonocoxal process has a long free distal extension in all Ethiopian Therevinae; however, it is short but distinct in some species of *Schoutedenomyia* (Text-fig. 32). The basal portion of the dorsal gonocoxal process is never attached to the aedeagus by a sclerotized bridge. Ventral margin of gonocoxite with an extension, the ventral lobe, which varies in shape. The gonocoxite also bears a stylus, a flexible rod inserted into its lumen. Aedeagus always free in Ethiopian Therevinae and consisting of a longer or shorter phallus, which may be more or less curved; a dorsal apodeme and a ventral apodeme of variable shape (dorsal apodeme reduced in *Stenopomyia distincta*); and, inserted between these, an ejaculatory apodeme shaped like a rod.

Female terminalia. These have not been studied in detail, but externally are very uniform. Tergite 10 (acanthophorites) strongly spinose; spines of two distinct types: those more distal in position are stout and project mostly dorsad and laterad, those more basal in position are slimmer and project ventrad and laterad.

DIAGNOSTIC KEY TO THE SUBFAMILIES,* AND TO THE GENERA OF THE SUBFAMILY THEREVINAE, OF THE ETHIOPIAN REGION

1 Dorsal sclerotized bridge present between dorsal apodeme of aedeagus and basal end of dorsal gonocoxal process; or if absent (Tribe Xestomyzini), then hypandrium very large and haired, and dorsal apodeme of aedeagus reduced. Ventral apodeme of aedeagus deeply forked. Tergite 10 of female weakly spinose, the spines of only one kind. Hind femur without hairs, or the hairs simple and unmodified. Vein R_1 often setulose . . . . . **PHYCINAE**

– Aedeagus free, no dorsal sclerotized bridge between dorsal apodeme of aedeagus and basal end of dorsal gonocoxal process; or if dorsal apodeme absent (*Stenopomyia distincta*), or narrow and rod-shaped (*Stenosathe*), then hypandrium very reduced and without hairs. Ventral apodeme of aedeagus not forked, at most slightly incised distally. Tergite 10 of female strongly spinose, the spines of two distinct kinds: those more distal in position stouter, shorter, projecting mostly dorsad and laterad, those more basal in position slimmer, longer, projecting ventrad and laterad. Hind femur with scale-like to feathery hairs. Vein R_1 not setulose **(THEREVINAE)** 2

2 Coxae 1 and 2 bare on posterior surface. Sternopleuron bare, or short-haired on dorsal part only (in ♂ of *Stenosathe*). Prosternum only haired on lateral parts (haired over whole surface in *Stenosathe brachycera*). Femoral setae short. Aedeagus usually comparatively long and narrow in dorsal view. 1 or 2 supraalar setae on each side. 2 to 4 scutellar setae 3

– Coxae 1 and 2 haired on posterior surface. Sternopleuron long-haired over most of

* The diagnostic characters used for separating the two subfamilies only apply to the Ethiopian members of the family.

its surface, even on the anterior and ventral parts. Prosternum long-haired over whole surface. Femoral setae longer. Aedeagus comparatively short and broad in dorsal view. 2 supraalar setae on each side. Always 4 scutellar setae . . 5

3 Tibial setae shorter, most of the setae on tibia 1 distinctly shorter than tibial diameter (Text-figs 20–23). Antennal style short, about 20–25 per cent of length of third antennal segment (Text-figs 13–18). Palpus obviously two-segmented, apical segment often wider than basal segment (Text-fig. 19). Epandrium simple or with slight modifications. Tip of stylus thick and hook-shaped. Cell M_3 usually petiolate. Frons totally bare . . ***SCHOUTEDENOMYIA*** (p. 199)

– Tibial setae longer, most of the setae on tibia 1 longer than tibial diameter. Antennal style long, usually about 40–50 per cent of length of third antennal segment (Text-figs 75-86, 166). Palpus one-segmented and uniformly vermiform. Epandrium often with strong modifications in shape (cf. Text-figs 104, 163). Tip of stylus slender and only slightly curved (cf. Text-figs 103, 160). Cell M_3 usually broadly open (Text-figs 87, 88). Male frons bare or haired; female frons usually with short black hairs. 4

4 Upper eye-facets of male not distinctly enlarged. Facial margins only slightly diverging below: distance between lower eye corners equal to less than half height of head (Text-figs 1–3, 5, 7, 9, 11). Frons of female, and of dichoptic males, with a pattern of blackish, brownish or greyish tomentum, sometimes also slightly shining below. Epandrium usually with strong modifications in shape (cf. Text-figs 104, 163). Aedeagus in dorsal view with dorsal apodeme at least slightly wider than proximal part of phallus (cf. Text-figs 106, 162) ***STENOPOMYIA*** (p. 219)

– Upper eye-facets of male distinctly enlarged. Facial margins more diverging below: distance between lower eye-corners equal to half or more height of head (Text-fig. 168). Frons of female entirely tomentose with brownish and greyish colours, but not forming any distinct pattern (Text-fig. 168). Epandrium simple (Text-figs 173, 180). Aedeagus in dorsal view with dorsal apodeme narrower than proximal part of phallus (Text-figs 172, 179) . . . . ***STENOSATHE*** (p. 246)

5 Male eyes nearly touching or separated by a distance 2–4 times as wide as anterior ocellus. Female frons very wide and with two large, circular dull blackish areas (Text-figs 320, 321). Front coxae without setae anteriorly ***NEOTHEREVA*** (p. 291)

– Male eyes touching or separated by less than width of anterior ocellus. Female frons narrower; if with large, circular blackish areas, these are shining. Front coxae with a few setae anteriorly 6

6 Third antennal segment (Text-fig. 440) with a very distinct constriction basally; antennae thus appearing 4-segmented, exclusive of style. Female eyes (Text-fig. 440) strongly reduced, very narrow in lateral view . ***CAENOPHTHALMUS*** (p. 334)

– Third antennal segment without a distinct constriction basally; antennae always appearing 3-segmented, exclusive of style. Female eyes normal . . . 7

7 Facial margin moderately diverging below: the distance between lower eye-corners equal to 47–87 per cent of height of head. Face bare (only haired in *Irwiniella semiargentea*). Female frons never with subshining to shining areas . . . 8

– Facial margins more diverging below: the distance between lower eye-corners equal to 84–127 per cent of height of head. Face with hairs on lateral areas. Female frons often with subshining to shining areas 9

8 First and third antennal segments (Text-figs 189–203) at most about 5 times as long as wide . . . . . ***IRWINIELLA*** (p. 251)

– Both first and third antennal segments 10–12 times as long as wide ***NEOPHYCUS*** (p. 288)

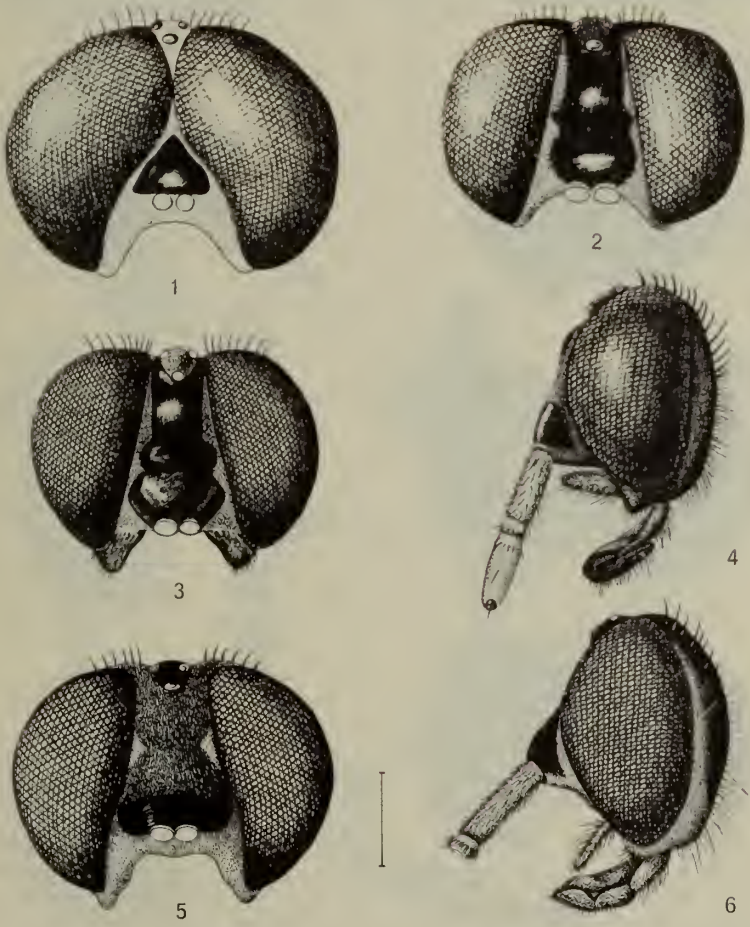
9 Distance between lower eye-corners equal to 84–98 per cent of height of head (Text-figs 330–332). Female frons shining on most of its area, at least not partly tomentose on the upper part . . . . ***PSEUDOTHEREVA*** (p. 295)

– Distance between lower eye-corners usually exceeding height of head (Text-figs 351, 357, 364). Female frons at least partly tomentose on the upper part ***THEREVA*** (p. 303)

SCHOUTEDENOMYIA Kröber

Schoutedenomyia Kröber, 1936 : 256. Type-species: *Schoutedenomyia congoensis* Kröber, by monotypy.

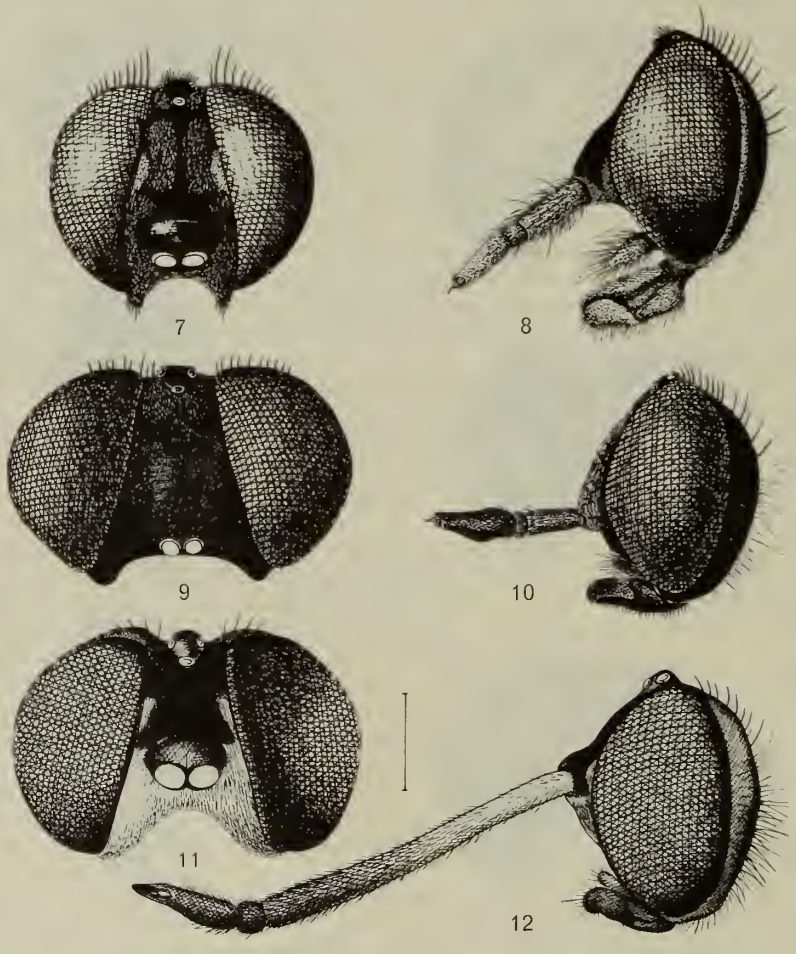
Description. *Head.* Male eyes touching, or nearly touching, for rather a short distance (Text-fig. 1). Upper facets of male eyes distinctly larger than lower facets, often with a rather sharp line of demarcation between the larger and smaller facets, as shown in Text-fig. 1. Male frons triangular, in some species with a shining blackish callus, in other species entirely tomentose. Female frons (Text-figs 2, 3, 5, 7, 9, 11) broad, gradually increasing in width below; colour mostly blackish and shining, but small and narrow areas of greyish tomentum may occur along the eye-margins. Female frons not plain, as upper and lower parts are more raised than central part. Face short and slightly widening below. Facial indices varying between 0·47 and 0·68. Proboscis short, reaching at most to level of middle of first antennal segment, in most species not reaching to level of antennal bases. Labella of proboscis broad. Palpi



Figs 1–6. Heads of *Schoutedenomyia*. 1, *S. antennata*, ♂ holotype in frontal view; 2, *S. samaruensis*, ♀ in frontal view; 3, *S. congoensis*, ♀ holotype in frontal view; 4, same in lateral view; 5, *S. signata*, ♀ holotype in frontal view; 6, same in lateral view. Scale: 0·5 mm.

shorter than proboscis, obviously two-segmented (Text-fig. 19), although segmentation is often difficult to discern without dissection. Apical segment of palpi often distinctly wider than basal segment (Text-fig. 19). Frons and face always entirely bare, while genae may have some hairs. Lower part of occiput with a moderately long whitish pile. Upper part of occiput with the post-ocular and occipital setae rather long, especially in the male, forming a continuous row. Antennae always simple. First and third antennal segments of almost equal width, their relative lengths showing interspecific differences (Text-figs 4, 6, 8, 10, 11, 13–18). Antennal style short, its length about 20–25 per cent of the length of third segment. It is often more or less distinctly inserted into a groove in the third segment, and has a subapical position in *longeantennata*. Style consisting of two segments of almost equal length and an apical spine. The style may be conical or more parallel-sided.

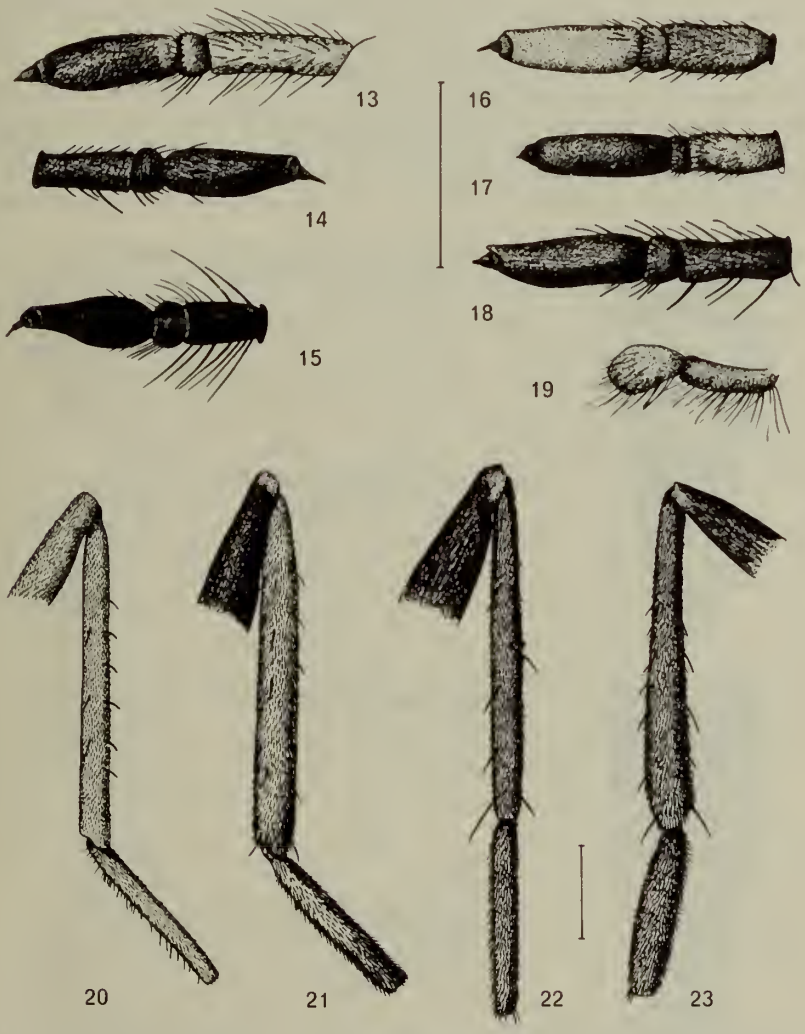
Thorax. Three notopleural, 1–2 supraalar, one postalar setae. Dorsocentral setae never present. Two or four scutellar setae, if four, then the lateral pair shorter than the apical pair. Ground colour blackish, mesonotum more or less dulled by greyish and brownish tomentum, which may form indistinct stripes. Prosternum with short whitish pile only on lateral areas.



Figs 7–12. Heads of *Schoutedenomyia*. 7, *S. lindneri*, ♀ holotype in frontal view; 8, same in lateral view; 9, *S. leclercqi*, ♀ holotype in frontal view; 10, same in lateral view; 11, *S. longeantennata*, ♀ holotype in frontal view; 12, same in lateral view. Scale: 0·5 mm.

Mesopleuron, especially the upper part, and metapleural callosity with whitish pile. Other pleural sclerites, including the whole sternopleuron, completely free of pile. Pleura more or less tomentose.

Wings (Text-figs 26–29). Cell R_4 shows considerable diversity in shape. In the type-species (Text-fig. 26) it is remarkably long and slender, i.e. about four times as long as wide at wing-margin. Other species have cell R_4 distinctly shorter and wider. At the same time vein R_4 also has a variable curvature. It is evenly S-curved in species with a wide cell R_4, but often



FIGS 13–19. *Schoutedenomyia*. 13–18, antennae; 19, palpus. 13, *S. antennata*, ♂ holotype; 14, *S. langi*, ♂ holotype; 15, *S. macroptera*, ♂ holotype; 16, *S. samaruensis*, ♀; 17, same, ♂ holotype; 18, *S. kroeberi*, ♂ holotype; 19, *S. samaruensis*, ♀. Scale: 0·5 mm.

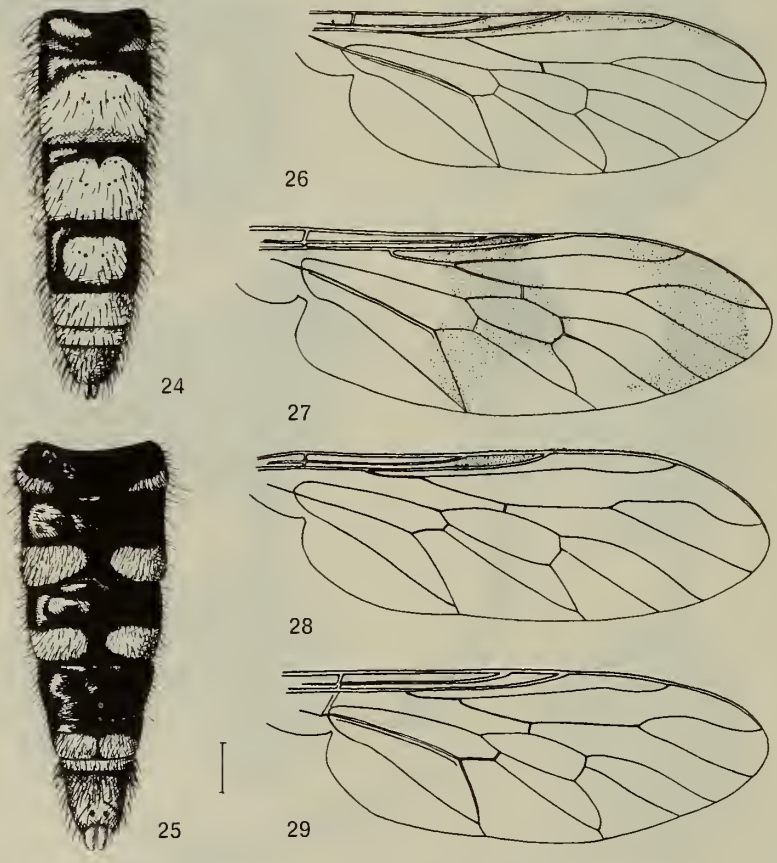
FIGS 20–23. Front legs of *Schoutedenomyia*, posterior view. 20, *S. congoensis*, ♀ holotype; 21, *S. signata*, ♀ holotype; 22, *S. lindneri*, ♀ holotype; 23, *S. leclercqi*, ♀ holotype. Scale: 0·5 mm.

has the proximal part straighter in species with a narrower cell R_4 (Text-figs 26, 28). Cell M_3 may be open, but is usually petiolate; this character certainly shows infra-specific variation. Wing-colour nearly always uniformly hyaline with a more or less intense greyish brown tinge, with dark stigma and veins. Only one species, *signata*, has an indistinctly banded wing (Text-fig. 27).

Legs (Text-figs 20–23). Coxae without pile on posterior surfaces. *Av* setae always present on f_3, less constantly on f_1, and rarely on f_2. F_3 may have a few short additional *pv* setae. Front tibiae with some *ad*, *pd* and *pv* setae, all of which are comparatively short, i.e. most of them always distinctly shorter than width of t_1. T_2 and t_3 with rows of short *ad*, *pd*, *av* and *pv* setae, all being comparatively short. T_1 and its metatarsus are normal in most species, only distinctly thickened in *leclercqi* (Text-fig. 23). Claws and pulvilli normal.

Abdomen (Text-figs 24, 25). In most species the male abdomen is narrow and parallel-sided (Text-fig. 24), and is either entirely tomentose or has a pattern of tomentose and shining areas. One species, *samaruensis* (Text-fig. 25), has a differently shaped abdomen which is more gradually tapering as in the female sex. The abdominal pile is comparatively short.

Male terminalia. The epandrium is slightly variable in shape. In particular, the posterior margin shows tendencies towards the formation of dentate projections on lateral corners. The



FIGS 24–29. *Schoutedenomyia*. 24, 25, abdomens in dorsal view; 26–29, wings. 24, *S. antennata*, ♂ holotype; 25, *S. samaruensis*, ♂ holotype; 26, *S. congoensis*, ♀ holotype; 27, *S. signata*, ♀ holotype; 28, *S. lindneri*, ♀ holotype; 29, *S. leclercqi*, ♀ holotype. Scale: 0·5 mm.

cerci are also variable in shape and are conspicuously enlarged in two species (Text-figs 31, 39). Paraproct shaped as a small plate; sclerotizations of the intersegmental membrane never present. Posterior margin of gonocoxite of very variable shape, abruptly truncate in *langi* (Text-fig. 46) or extended into a shorter and longer projection which reaches its maximal length on *kroeberi* (Text-fig. 55). The distal end of dorsal gonocoxal process is also very variable in length but this does not seem to be correlated with a more or less pronounced projection on the posterior margin of the gonocoxite, though in most species the two structures reach to almost the same level. The shape of stylus is characteristic in the genus. Its structure is comparatively strong, with the ventral margin more or less suddenly curved and forming a distinct hook apically. This hook is accentuated by a deep indentation in the dorsal margin of the stylus. The ventral lobe is a long, irregularly shaped structure and is shorter than the stylus. The hypandrium is always present and free, comparatively large in *kroeberi* (Text-fig. 58) and here with a few setae; in the other species (Text-fig. 34) it is smaller and without hairs. The aedeagus is free, and is basically very long and slender in shape. The phallic part in most species consists of a slender, undulating tube, while the dorsal, ventral and ejaculatory apodemes are completely uncomplicated in structure. Tergite 8 is very narrow medially. Sternite 8 is well-developed.

Remarks. The genus *Schoutedenomyia* has not been mentioned in the literature since it was first described by Kröber (1936) for a new species, *congoensis*, founded on a single, badly preserved female specimen. Nine further species are placed in the genus in the present paper. Six of these are described as new, whilst the three others were originally described in *Psilocephala*. The ten species are represented in all by only 20 specimens. This is, of course, an unsatisfactory basis for a sound taxonomic treatment of the genus. Only one species, *samaruensis*, is represented by what is presumed to be male and female of the same species. Two female specimens are at hand of the type-species, *congoensis*, four male specimens are known of *antennata* and two of *macroptera*. Two species, *langi* and *kroeberi*, are known only from the male holotypes, while four other species, *signata*, *lindneri*, *leclercqi* and *longeantennata* are only known from the female holotypes.

The genus seems to be widespread in tropical Africa, from Nigeria and Kenya in the north to Mozambique and Rhodesia in the south, and may have its centre of distribution in Zaire. The species seem to be collected only rarely. Little can be said about the habitats, but the species seem to be associated with riverbanks and lake shores. They do not show any association with coastal beaches.

The species of *Schoutedenomyia* bear a close superficial similarity to the New World species of *Furcifera*, a genus erected by Kröber (1911 : 524) for three new species, *polita*, *fascipennis* and *longicornis*, originating from South America and Mexico. The second of these species, *fascipennis*, was designated as the type-species by Cole (1960 : 161), who also synonymized *Epomyia* Cole (1923) with *Furcifera*. The antennae are of practically the same shape in *Schoutedenomyia* and *Furcifera*. They are rather slender, the segments being of almost equal width and having very short pile. The style is short and is placed on the truncate tip of the third segment, sometimes in a distinct groove which may be situated more or less subapically. The proboscis is short and has broad soft labella, whilst the palpi appear two-segmented, with the apical segment often distinctly wider than the basal segment. The males seem to be holoptic in both genera.

The female frons is distinctly broader in *Schoutedenomyia* than in *Furcifera*,

and it is a characteristic difference that the ocellar plate in *Furcifera* occupies the entire width of the frons, whereas in *Schoutedenomyia* there is a space between the outer margin of the ocellar plate and the eye-margin (Text-figs 2, 3, 5, 7, 9, 11). There is also a fundamental difference in the pattern of frontal ornamentation between the two genera. The females of *Furcifera* have a large, velvet-black spot between the tomentum of the face and lower frons and the more shining black colour of the upper frons, this mark being specific in shape. In females of *Schoutedenomyia* the frons is basically black and shining, with only narrow areas of greyish tomentum laterally at eye-margins (Text-figs 2, 3, 5, 7, 9, 11). Males of *Furcifera* often have a small velvety-black area at extreme top of frons, while males of *Schoutedenomyia* have the frons either entirely pale tomentose or with a shining black area on lower part (Text-fig. 7).

The chaetotaxy of the thorax is not constant in either genus. The scutellar setae are present as 2 strong pairs in some species of both genera, or as only 1 pair (which may be weak or strong) in several species of *Schoutedenomyia* and in *F. scutellaris* (Loew), or may even be absent as in *F. achaeta* Malloch and *F. kroeberi* Cole, both South American species. The number of supraalar setae also varies. No dorsocentral setae are present in either genus. The distinctive pattern of mesonotum and scutellum found in the species of *Furcifera* is not found in the species of *Schoutedenomyia*. These have a banded and striped mesonotum as 'normal' in the Therevidae.

The wings do not show any structural differences between the two genera. The same is true of the legs. Front and hind femora may have a few short *av* setae. The tibial setae are weak, especially those setae forming the two dorsal rows on front tibia (Text-figs 20–23). Front tibia and metatarsus are more or less thickened in the species of *Furcifera*, but this is not the case in the species of *Schoutedenomyia*, except in one species, *leclercqi* (Text-fig. 23).

The male abdomen is cylindrical in both genera and the terminal segments show a tendency to be telescopically withdrawn into the rest of the abdomen. The abdomen has a pronounced pattern of tomentose and non-tomentose areas. In nearly all species of both genera the male terminalia are characteristically reddish yellow.

The male terminalia show some fundamental differences in the two genera. These differences may be of great importance for a future understanding of phylogenetic relationships for which reason they are discussed in detail here. The present author (Lyneborg, 1969) has previously described the male terminalia of a Mexican species of *Furcifera*, *sumichrasti* Bellardi. A further species, obviously undescribed and originating from S. Brazil, has also been dissected.

The epandrium is more highly specialized in *Furcifera* than in *Schoutedenomyia*, as the posterior corners are more or less projecting. In some species of *Schoutedenomyia* the cerci are enlarged and well sclerotized, whereas in *Furcifera* they are weakly sclerotized and of normal size, probably a compensation for the projecting posterior corners of epandrium. The gonocoxites have reached what is supposed to be a more advanced stage in *Furcifera* than in *Schoutedenomyia*. In *Furcifera* the gonocoxites are fused ventrally, forming together with the hypandrium a

ventral synsclerite. *Schoutedenomyia* has free gonocoxites and a free hypandrium (Text-fig. 58).

Furthermore, the gonocoxites in *Furcifera* have a distinct tendency to form a proximal (anterior) and a distal (posterior) part. This tendency is very pronounced in *sumichrasti* (see Lyneborg, 1969: fig. 31); in other species the posterior part is more like a pointed projection. Similar projections occur in some species of *Schoutedenomyia*, but they are never so accentuated. The dorsal gonocoxal process, which is so prominent in *Schoutedenomyia*, is completely absent in *Furcifera*. This important detail is related to the fact that the aedeagus is quite free in *Schoutedenomyia*, whereas in *Furcifera* there is a well sclerotized narrow bridge from the aedeagus to the basal portion of the dorsal gonocoxal process. The stylus of *Schoutedenomyia* is rather complicated in shape with its hooked apex and median lobe; in *Furcifera* the stylus is more simple, but quite strong.

On this basis there is no doubt that *Furcifera* and *Schoutedenomyia* not only represent distinct genera but also belong to different suprageneric categories. *Furcifera* certainly represents more advanced Therevidae than does *Schoutedenomyia*, i.e. it possesses a larger number of apomorphic characters than does *Schoutedenomyia*.

As to possible relatives of *Furcifera*, attention should be directed to the Neotropical genus *Cyclotelus* Walker, 1850. The type-species is *pruinosus* Walker, 1850, according to a designation by Becker (1912 : 315). I have dissected the male holotype of *pruinosus*, which is in the British Museum (Natural History). The terminalia are basically identical with those of *Furcifera* as discussed above, and I think it likely that *Furcifera* will later have to be treated as a synonym of *Cyclotelus*. The Mexican species, '*Thereva*' *crassicornis* Bellardi, 1861, which was redescribed by the present author (Lyneborg, 1969 : 398), also belong to this group.

The reason why this astonishing superficial similarity between *Schoutedenomyia* and *Furcifera* has been discussed in such great detail is that the two genera seem to represent a fine example of parallelism. Their species certainly occupy the same ecological niches in tropical and subtropical environments in Africa and the New World, respectively. It is also worth mentioning that similar Therevid flies occur in North Australia (Queensland), but the phylogenetic relationships of these cannot be discussed at present due to lack of information.

The genus *Schoutedenomyia* has a somewhat isolated position among the Ethiopian genera of Therevinae. The obviously two-segmented palpus is a plesiomorphic character; all other genera treated in this paper have a one-segmented, vermiform palpus representing an apomorphic condition. Some synapomorphic characters for the genus can be listed as follows: frons totally bare, also in female; antennal style very shortened; cell M_3 usually petiolate; setae of tibia 1 reduced; stylus modified; and phallic part of aedeagus very elongate.

The genus seems rather heterogeneous in its specific content, but as the available material is very sparse, further discussion of the infra-generic relationships would be premature.

Key to Species of *SCHOUTEDENOMYIA*

1 Eyes touching on frons (males) 2

– Eyes broadly separated on frons (females) 6
2 Terminalia reddish yellow 3
– Terminalia blackish . . . . . ***langi*** (p. 210)
3 Frons with a polished black callus (Text-fig. 1) 4
– Frons more or less intensely tomentose, never with a polished black callus . . 5
4 Femora yellowish. Halteres dark brownish. Abdomen as in Text-fig. 24 ***antennata*** (p. 206)
– Femora more or less darkened. Halteres whitish. Abdomen as in Text-fig. 25 ***samaruensis*** (p. 208)
5 Frons intensely whitish grey tomentose. Antennal pile long (Text-fig. 15). Two *sa* setae . . . . . ***macroptera*** (p. 313)
– Frons less intensely tomentose, thus appearing subshining. Antennal pile short (Text-fig. 18). One *sa* seta . . . . . ***kroeberi*** (p. 212)
6 Frons with a narrow, irregular stripe of greyish tomentum along entire eye-margin (Text-figs 2, 3) 7
– Frons without such a stripe of greyish tomentum along entire eye-margin (Text-figs 5, 7, 9, 11), at most with a small area of tomentum at middle (Text-figs 5, 7, 11) 8
7 First antennal segment shorter than third segment (Text-fig. 16). Cell R_4 only about 2·5 times as long as wide. Halteres whitish . . . ***samaruensis*** (p. 208)
– First antennal segment about as long as third segment (Text-fig. 4). Cell R_4 about 4 times as long as wide (Text-fig. 26). Halteres brownish . ***congoensis*** (p. 215)
8 First antennal segment (Text-fig. 12) nearly twice as long as length of head and thrice as long as third antennal segment . . . ***longeantennata*** (p. 218)
– First antennal segment (Text-figs 6, 8, 10) not as long as length of head, and first and third segments of almost equal length 9
9 Frons without areas of thick tomentum (Text-fig. 9), though there may be a very thin tomentum all over. Front tibia and tarsus thickened (Text-fig. 23) ***leclercqi*** (p. 217)
– Frons with a small area of tomentum at eye-margin near middle of frons (Text-figs 5, 7). Front tibia and tarsus more slender (Text-figs 21, 22) 10
10 Wing with two broad, indistinctly brownish bands (Text-fig. 27). First antennal segment long (Text-fig. 6) . . . . . ***signata*** (p. 216)
– Wing without bands (Text-fig. 28). First antennal segment shorter (Text-fig. 8) ***lindneri*** (p. 216)

Schoutedenomyia antennata (Kröber) comb. n.

(Text-figs 1, 13, 24, 30–38)

Psilocephala antennata Kröber, 1939 : 396. Holotype ♂, Rhodesia (BMNH) [examined].

Diagnosis. ♂. Frons with shining black callus (Text-fig. 1). Two *sa* and four *sc* setae. Halteres dark brownish. Cell M_3 petiolate. Femora all yellowish and not tomentose. Abdomen slender (Text-fig. 24). Terminalia reddish yellow. ♀. Unknown.

Redescription. ♂. *Head* (Text-figs 1, 13). Facial index 0·60. Frons raised and predominantly shining blackish, only narrowly whitish grey tomentose along eye-margin. Face also whitish grey tomentose. Occiput shining blackish below, but greyish tomentose on an area along eye-margin that includes the short and narrow gena. Upper part of occiput dark greyish tomentose. About 18 long post-ocular and occipital setae on each side. Antennae yellowish brown, third segment darkened. All three segments with short black pile.

Thorax. Two *sa* setae, four short *sc* setae. Mesonotum black and subshining, with two indistinct, whitish tomentose stripes. Mesonotal pile long (0·25 mm) and whitish. Scutellum blackish, thinly greyish tomentose and with whitish pile. Pleura greyish tomentose, except on pteropleuron which is brownish black and more shining.

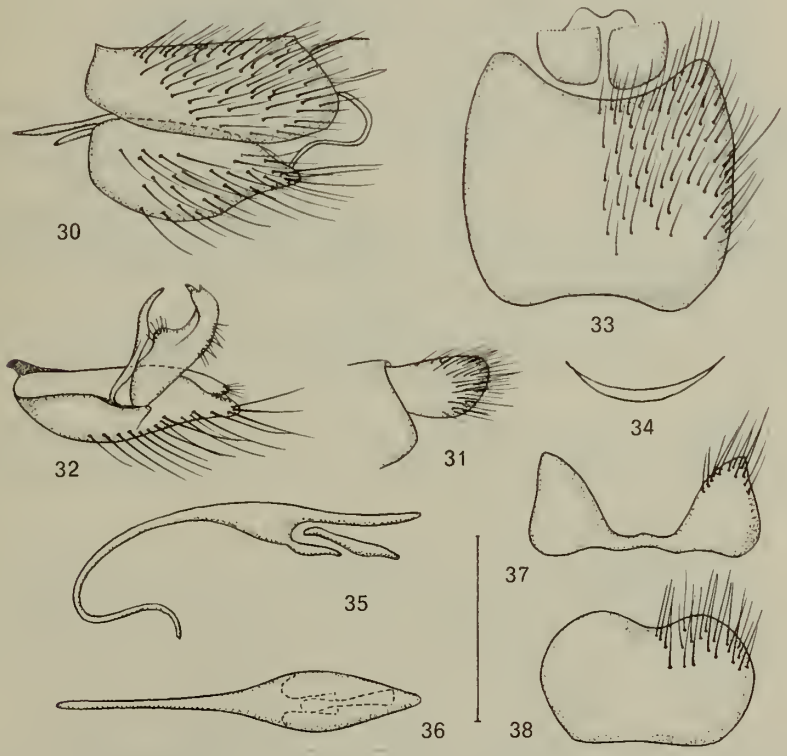
Wings. Cell M_3 long-petiolate. Cell R_4 about 2·5 times as long as wide. Vein R_4 rather

broad and S-shaped. Colour hyaline, with a slight greyish brown tinge. Stigma and veins dark brownish. Halteres dark brownish.

Legs. F_1 and f_2 without setae. F_3 with 2–3 short *av* setae in apical half. Coxae greyish tomentose. Femora and tibiae yellowish to yellowish brown, tibiae darker than femora. Tarsi yellowish brown at bases, becoming dark brownish towards tips.

Abdomen (Text-fig. 24). Shape cylindrical, only narrowing a little towards the apex. In dorsal view tergites 2–6 appear predominantly silvery whitish grey tomentose. Tergites 2–3 are shining blackish on antero-lateral corners and on extreme anterior parts, while tergite 4 is shining blackish anteriorly, posteriorly and laterally, leaving a semi-rectangular central area whitish grey tomentose. In posterior view tergites 4–5 are entirely whitish grey tomentose. Lateral margins of tergites 2–3 and 5 are blackish on anterior half and whitish grey on posterior half, while tergite 4 is black for its entire length. Pile whitish on all tergites. Hind-marginal seams indistinct. Sternites in ventral view shining blackish brown; in lateral view, the postero-lateral parts of sternites 2–3 appear greyish tomentose. Pile whitish on these two sternites, while the following sternites have a blackish pile.

Terminalia (Text-figs 30–38). Entirely reddish yellow with black pile. Epandrium as in Text-fig. 33. Cerci (Text-fig. 31) distinctly enlarged, obviously broken in the holotype (Text-fig. 30). Posterior margin of gonocoxite (Text-fig. 30) with a moderately long pointed projection. Distal end of dorsal gonocoxal process comparatively short, not visible in lateral view (Text-fig. 30), but appearing in ventral view (Text-fig. 32). Stylus comparatively slender, with two



FIGS 30–38. Male terminalia of *Schoutedenomyia antennata*, holotype (except 31). 30, genitalia in lateral view; 31, cerci of an undamaged specimen; 32, right gonocoxite in intero-ventral view; 33, epandrium in dorsal view; 34, hypandrium; 35, aedeagus in lateral view; 36, aedeagus in dorsal view; 37, tergite 8; 38, sternite 8. Scale: 0·5 mm.

small teeth at the curved apex. Ventral lobe narrow and arising from a lamellate triangular process on ventral margin of gonocoxite, as a result of which a secondary articulation seems to appear. Hypandrium as in Text-fig. 34. Aedeagus greatly overhanging anterior and posterior margins of epandrium; its shape as shown in Text-fig. 35 and Text-fig. 36. Tergite 8: Text-fig. 37. Sternite 8: Text-fig. 38.

Total length about 7 mm.

♀. Unknown.

DISTRIBUTION. Kenya, Rhodesia, Botswana and S. W. Africa.

MATERIAL EXAMINED.

Holotype ♂, RHODESIA ('S. Rhodesia'): Bulawayo, 27.vii.1923 (BMNH); the specimen has lost its right antenna, right p_2, tarsi of right p_3 and left p_1 and p_3, and the abdomen has been detached and is glued to the thorax in an inverted position.

KENYA: Stony Athi, 1 ♂, vi.1940 (BMNH). BOTSWANA: Ootsi, 1 ♂, ix. 1973 (*J Reed*) (CNC). SOUTH WEST AFRICA: Papa Falls, Kavango, 18°07'E 27°33'S, 1 ♂ 26–31.viii.1971 (WM).

Schoutedenomyia samaruensis sp. n.

(Text-figs 2, 16, 17, 19, 25, 39–45)

DIAGNOSIS. ♂. Frons with a shining black callus as in *antennata*. One *sa* and two *sc* setae. Halteres whitish. Cell M_3 petiolate. Femora more or less darkened, not entirely yellowish as in *antennata*, and abdomen with different pattern (cf. Text-figs 24 and 25). Terminalia reddish yellow.

♀. Frons with a tomentose stripe along entire eye-margin as in the type-species, *congoensis*. First antennal segment shorter than third (in *congoensis* of the same length). One *sa* and two *sc* setae. Wing unicolourous. Cell R_4 wide, only 2·5 times as long as wide, and cell M_3 long-petiolate. Halteres whitish. Front leg slender.

DESCRIPTION. ♂. *Head* (Text-fig. 17). Facial index 0·47. Practically as described for *antennata*, but lower part of occiput more densely tomentose, and genae and face narrower. Antennae shorter, more blackish, and antennal pile shorter. About 13 post-ocular and occipital setae.

Thorax. 1 *sa* seta, 2 short *sc* setae. Colour as in *antennata*, but mesonotum less shining blackish due to a denser covering of greyish tomentum. Pile shorter than in *antennata* and of the same colour as in this species. Scutellum more greyish tomentose than in *antennata*; the pile whitish.

Wings. Cell R_4 2·6 times as long as wide. Proximal part of vein R_4 straighter than in *antennata*. Other structures and colour as in *antennata*. Halteres entirely whitish.

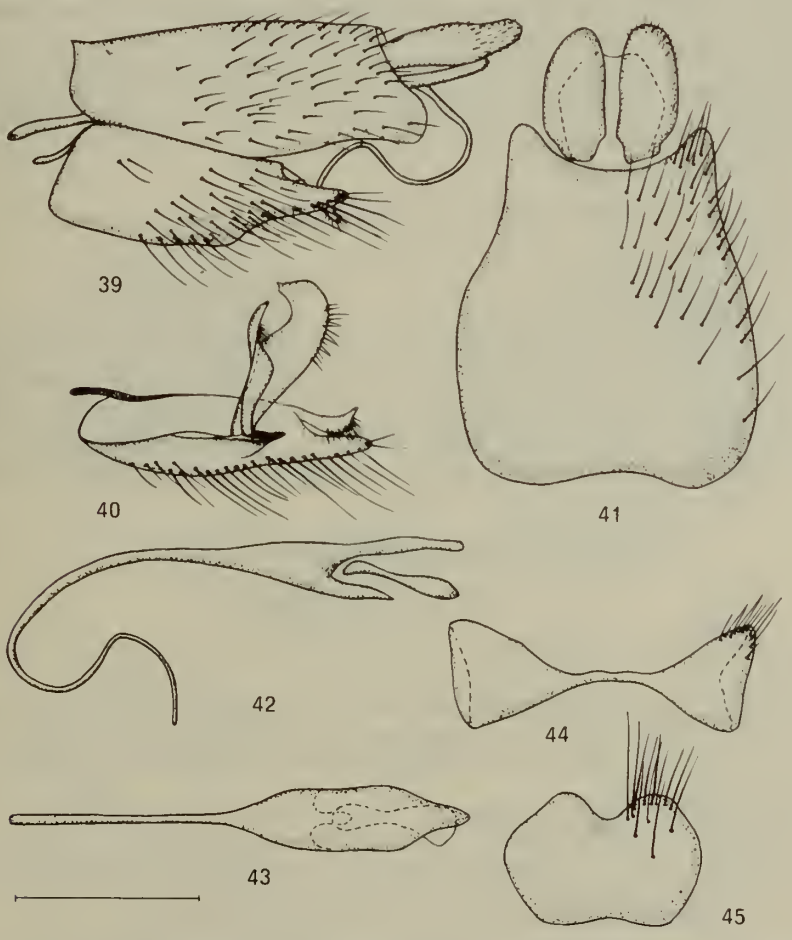
Legs. F_1 with a small *av* seta near middle. F_3 with 4 rather strong *av* setae in apical half. Coxae greyish black. F_1, f_2 and tibiae yellowish to yellowish brown, but the femora partly darkened: F_1 blackish brown on posterior surface of basal fourth and f_2 on basal half. F_3 predominantly blackish brown, only paler brownish on ventral surface of apical fourth. Tibiae yellowish brown. Tarsi yellowish brown at bases, becoming darker brownish towards tips.

Abdomen (Text-fig. 25). Shape more pointed than in *antennata*. The pattern on tergites 1–4 is different from that of *antennata*. Tergite 1 blackish dorsally, greyish postero-laterally. Tergites 2–3 with blackish anterior bands, which occupy about half the length of tergite 2 and less than half the length of tergite 3. The bands of both tergites are broadest on the mid-line, where they project towards posterior margins in the shape of a narrow triangle. Remainder of these tergites whitish grey tomentose. Tergite 4 entirely blackish. Pile mainly

whitish, moderately long laterally and short dorsally. Sternites brownish black with thin greyish tomentum. Their pile of the same colour as in *antennata*.

Terminalia (Text-figs 39–45). Large and entirely reddish yellow; pile black. Epandrium (Text-fig. 41) longer than in *antennata*, its postero-lateral corners moderately long, but broadly rounded. Cerci (Text-fig. 39) strongly enlarged, well sclerotized and short-haired. Paraproct also large. Posterior margin of gonocoxite (Text-fig. 39) with a long pointed projection. Dorsal gonocoxal process with a short, free distal end which is visible in lateral view (Text-fig. 39) below the posterior gonocoxal projection. Stylus (Text-fig. 40) broader at apex than in *antennata* and with two small teeth. Ventral lobe as in *antennata*. Aedeagus greatly overhanging both anterior and posterior margins of epandrium. Phallus shaped as in *antennata*, but larger and more undulating (Text-figs 42, 43). Tergite 8: Text-fig. 44. Sternite 8: Text-fig. 45.

Total length 6·8 mm.



FIGS 39–45. Male terminalia of *Schoutedenomyia samaruensis*, holotype. 39, genitalia in lateral view; 40, right gonocoxite in intero-ventral view; 41, epandrium in dorsal view; 42, aedeagus in lateral view; 43, aedeagus in dorsal view; 44, tergite 8; 45, sternite 8. Scale: 0·5 mm.

♀. *Head* (Text-figs 2, 16). Facial index 0·52. Shape and pattern of frons as in Text-fig. 2. All parts of head whitish grey tomentose, except the shining black frontal band. Gena narrow. Palpus as in Text-fig. 19. Only 10 post-ocular + occipital setae which are shorter than in male. Antennae (Text-fig. 16) slightly wider than in male (Text-fig. 17) and distinctly paler than in the holotype (? due to bleaching in alcohol). First antennal segment distinctly shorter than third (excluding the style). Antennal colour may be termed yellowish brown.

Thorax. Chaetotaxy as in male. Mesonotum less intensely tomentose than in male, with two narrow and rather distinct, tomentose stripes (as in *antennata*). The area between these stripes is brownish black and distinctly different from the more steely black colour of the areas lateral to the two narrow stripes. Mesonotal pile short, consisting of erect black hairs and adpressed golden hairs. Scutellum and pleura as in male, but with shorter pile.

Wings. Cell R_4 2·5 times as long as wide. Vein R_4 as in male. Colour slightly darker than in male. Halteres whitish.

Legs. Chaetotaxy of f_1 and f_3 as in male. Colour mainly as in male, but f_1 and f_2 less intensely darkened (? due to bleaching), and f_3 yellowish brown to brown, thus distinctly paler than in male.

Abdomen. Tergites polished black, tergites 2–3, and 5, with lateral spots of whitish grey tomentum as shown in the figure. Pile short and mainly blackish, only whitish and tomentose areas of tergites 2–3. Sternites brownish black and shining. Ovipositor with two lateral groups of 6 slender, pointed spines.

Total length 6·9 mm–7·6 mm.

Distribution. Hitherto known only from Nigeria, where it seems to be widespread, though rare.

Material examined.

Holotype ♂, Nigeria: Zaria, Samaru, m.v.trap, 28.ii.1968 (*J. C. Deeming*) (BMNH).

Paratypes. Nigeria: Zaria, Samaru, 1 ♀, 30.i.1972 (*J. C. Deeming*) (ZMC); Ibadan, 1 ♀, ii. 1963, mounted from alcohol (*D. C. Eidt*) (CNC); Niger Prov., near Mokwa, Zugurma, on wet mud beside stream, 2 ♂, 22.xii.1971 (*J. C. Deeming*) (BMNH & ZMC); Mid-West State, Agbor, 1 ♀, 26.xii.1970 (*H. Politzar*) (BMNH).

Schoutedenomyia langi (Curran) **comb. n.**

(Text-figs 14, 46–54)

Psilocephala langi Curran, 1928 : 173; Kröber, 1933 : 295. Holotype ♂, Zaire (AMNH) [examined].

Diagnosis. ♂. Similar to *antennata*, but frons less raised and frontal callus not so polished black due to longitudinal grooves. One *sa* and two *sc* setae. Halteres blackish. Cell M_3 short-petiolate. Femora dark. Abdomen slender as in *antennata*, but terminalia blackish.

♀. Unknown.

Redescription. ♂. *Head* (Text-fig. 14). Facial index 0·58. Frons less raised than in *antennata* and with a shining blackish callus with longitudinal grooves. Upper and lateral parts of frons greyish tomentose, as must also be genae and occiput but these areas are discoloured in the single specimen available. About 10 short post-ocular + occipital setae on each side. Antennae blackish brown; pile short and black.

Thorax. 1 *sa* seta, 2 *sc* setae. The pattern of mesonotum is difficult to discern due to discolouration, but there are certainly two rather broad stripes of greyish tomentum on an otherwise blackish mesonotum. Mesonotal pile ca 0·10 mm long and dark. Scutellum greyish tomentose and with short pale hairs. Pleura appearing blackish due to discolouration, but certainly also predominantly greyish tomentose.

Wings. Cell R_4 as long as wide. Vein R_4 narrowly S-shaped. Cell M_3 short-petiolate. Colour hyaline with dark brownish veins and stigma. Knob of halteres blackish.

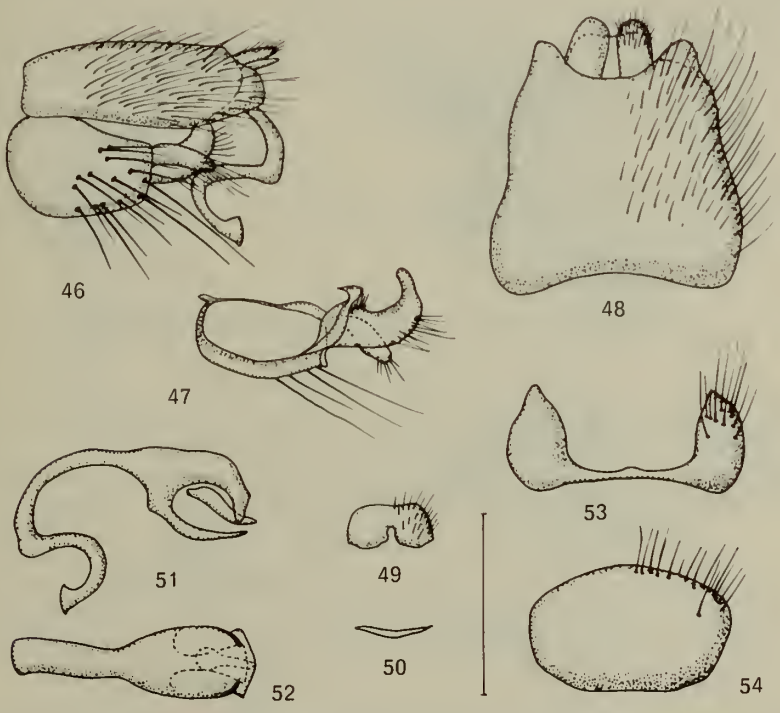
Legs. These are lost in the holotype, except for right p_2. F_2 blackish brown and without setae. T_2 and its tarsus yellowish brown.

Abdomen. Pattern difficult to describe because of discolouration, but the tergites will certainly all appear silvery greyish tomentose in dorsal view. Blackish areas appear laterally when viewed from behind. Pile sparse and whitish. Sternites blackish, being thinly greyish tomentose when viewed from behind. Pile blackish on the last sternites.

Terminalia (Text-figs 46–54). Entirely shining blackish, with black pile. Epandrium as in Text-fig. 48. Cerci not enlarged. Paraproct as in Text-fig. 49. Gonocoxite (Text-fig. 46) strikingly shorter than epandrium; its posterior margin abruptly truncate. Distal end of dorsal gonocoxal process long and comparatively broad. Stylus and phallic part of aedeagus also distinctly visible in lateral view. Stylus in ventral view broad and strongly curved distally, its apex being indistinctly dentate. Ventral lobe long, narrow and lamellate. Hypandrium (Text-fig. 50) very small. Aedeagus very large. The strongly sinuate phallus in particular (Text-fig. 51) comparatively broad and trumpet-shaped at apex; in dorsal view (Text-fig. 52) it is of the same width throughout. Dorsal apodeme short and strongly down-curved distally (Text-fig. 51); in dorsal view almost oval. Tergite 8: Text-fig. 53. Sternite 8: Text-fig. 54.

♀. Unknown.

Total length 6·0 mm.



Figs 46–54. Male terminalia of *Schoutedenomyia langi*, holotype. 46, genitalia in lateral view; 47, right gonocoxite in intervo-ventral view; 48, epandrium in dorsal view; 49, paraproct; 50, hypandrium; 51, aedeagus in lateral view; 52, aedeagus in dorsal view; 53, tergite 8; 54, sternite 8. Scale: 0·5 mm.

MATERIAL EXAMINED.

Holotype ♂, ZAIRE: Stanleyville, 10.iv.1915 (*Lang & Chapin*) (AMNH). The specimen is in a bad condition, as all the legs are lost except one, and the head and body are discoloured. However, the terminalia are very characteristic and should enable the species to be recognized again in the future.

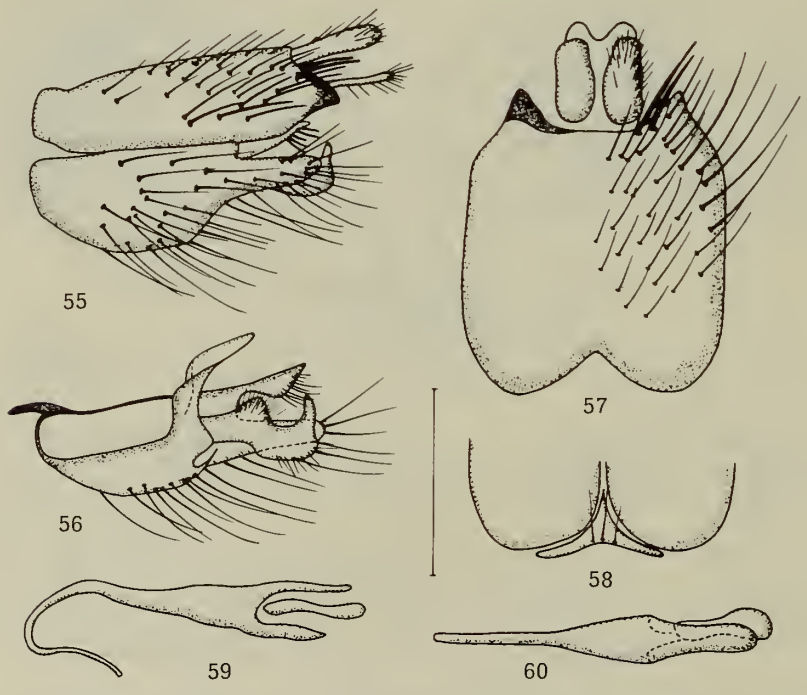
Schoutedenomyia kroeberi sp. n.

(Text-figs 18, 55–60)

DIAGNOSIS. ♂. Frons blackish and subshining, i.e. covered by thin tomentum. Antennal pile short (Text-fig. 18). 1 *sa* and 4 *sc* setae. Halteres brownish black. Cell M_3 open. Femora dark brownish to yellowish brown. Abdomen slender and tomentose all over, except on anterior corners of tergites 2–4. Terminalia reddish yellow.

♀. Unknown.

DESCRIPTION. ♂. *Head* (Text-fig. 18). Facial index 0·55. Frons slightly raised and with a subshining, blackish brown callus. Thick whitish grey tomentum present along eye-margin. Face and occiput with a comparatively thin layer of whitish grey tomentum; upper part of occiput appearing mainly subshining. About 15 post-ocular and occipital setae on each side. Antennae dirty brownish with black pile.



FIGS 55–60. Male terminalia of *Schoutedenomyia kroeberi*, holotype. 55, genitalia in lateral view; 56, right gonocoxite in intero-ventral view; 57, epandrium in dorsal view; 58, bases of gonocoxites and hypandrium in ventral view; 59, aedeagus in lateral view; 60, aedeagus in dorsal view. Scale: 0·5 mm.

Thorax. 1 *sa* seta; 4 *sc* setae, the lateral pair short and weak. Mesonotum black and subshining; with two indistinct, whitish tomentose stripes. The area between these stripes of a more brownish black colour than the areas lateral to the stripes. Mesonotal pile long (ca 0·25 mm) and pale. Scutellum and pleura as in *antennata*.

Wings. Cell R_4 2·6 times as long as wide. Proximal part of vein R_4 straight. Cell M_3 narrowly open. Colour hyaline, with a greyish brown tinge. Stigma and veins dark brownish. Halteres brownish black.

Legs. F_1 and f_2 without setae. F_3 with 3–4 short *av* setae in apical half. Coxae whitish grey tomentose. Femora dark brownish, f_1 and f_2 being more yellowish brown towards tips. T_1 and t_2 yellowish brown, t_3 dark brownish. Tarsi coloured as their corresponding tibiae.

Abdomen. Cylindrical and narrow in shape as in *antennata* (Text-fig. 24). All tergites appearing entirely whitish grey tomentose in anterior and dorsal views; in lateral and posterior views appearing less tomentose, as the brownish black ground-colour is distinctly visible. Extreme anterior corners of tergites 2–4 shining. Pile mainly whitish. Sternites mainly shining brownish to blackish.

Terminalia (Text-figs 55–60). Entirely reddish yellow with black pile. Epandrium (Text-fig. 57) with the posterior corners distinctly dentate and dark pigmented. A few very strong setae on posterior margin of epandrium. Posterior margin of gonocoxite (Text-fig. 55) with a long projection. Distal end of dorsal gonocoxal process comparatively short, but distinctly visible in both lateral (Text-fig. 55) and ventral (Text-fig. 56) views. Stylus (Text-fig. 56) of a characteristic shape; its ventral margin suddenly bent at an angle of 90 degrees; its dorsal margin with a semicircular emargination. Ventral lobe long, forming a fixed extension of the ventral margin of the gonocoxite. Hypandrium (Text-fig. 58) comparatively large, with 3 small hairs. Aedeagus (Text-figs 59, 60) of almost the same shape as in *antennata*, though phallus distinctly shorter and therefore not visible in external view (Text-fig. 55). Tergite 8 and sternite 8 were not found to be intact during dissection.

Total length 7·2 mm.

♀. Unknown.

Material examined.

Holotype ♂, Mozambique: Siluwe Hills west of Beira, 5.ix.1964 (*D. Cookson*) (NM).

Schoutedenomyia macroptera (Kröber) comb. n.

(Text-figs 15, 61–67)

Psilocephala macroptera Kröber, 1929 : 424. Holotype ♂, Tanzania (ZMB) [examined].

Diagnosis. ♂. Frons entirely and densely whitish grey tomentose. Antennal pile (Text-fig. 15) longer than in any other species of the genus. 2 *sa* and 4 *sc* setae. Halteres and femora brownish black. Abdomen whitish grey tomentose with small black areas on anterior corners of tergites 2–5. Terminalia reddish yellow.

♀. Unknown.

Redescription. ♂. *Head* (Text-fig. 15). Facial index 0·58. All parts of head intensely whitish grey tomentose. About 13 long post-ocular + occipital setae on each side. First antennal segment slightly shorter and narrower than third segment. Antennae blackish, first segment with thin greyish tomentum and black pile which is longer than the segment is wide.

Thorax. 2 *sa* setae, 4 long *sc* setae. Mesonotum black and dulled by greyish tomentum. A vaguely delimited, subshining brownish black median band flanked by two stripes, with rather intensely pale greyish tomentum. Mesonotal pile long (ca 0·40 mm) and erect, consisting of both pale and dark hairs. Scutellum and pleura black and greyish tomentose all over except on pteropleuron; the pile whitish and long.

Wings. Cell R_4 2·3 times as long as wide. Vein R_4 forming a rather wide S. Cell M_3 open in the holotype, short-petiolate in the other specimen available. Colour hyaline, with a very faint greyish brown tinge. Veins, stigma and halteres brownish black.

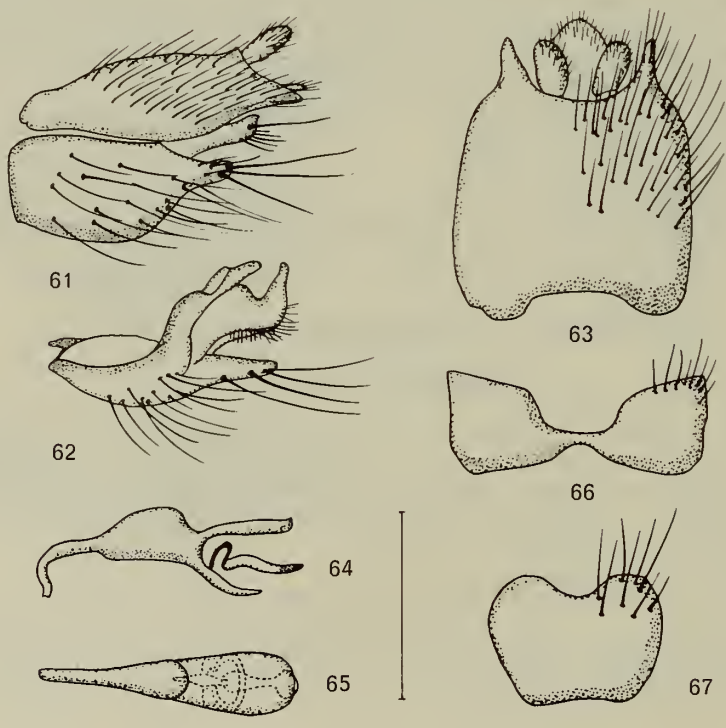
Legs. F_1 without setae. F_3 with 2 short *av* setae in apical half. Coxae greyish tomentose. Femora blackish brown, but pale brownish at extreme tips; f_3 with pale scaly hairs on anterior surface. T_1 and its tarsus blackish; other tibiae and tarsi brownish to brownish black.

Abdomen. Of practically the same shape as in *antennata* (Text-fig. 24). All tergites silver whitish grey tomentose, the extreme anterior corners of tergites 2–5 being blackish and shining. Pile long and whitish. Sternites 1–4 partly tomentose and whitish pilose; the following sternites more shining and with darker pile.

Terminalia (Text-figs 61–67). Entirely reddish yellow, with black pile. Epandrium (Text fig. 63) with posterior corners pointed. Posterior margin of gonocoxite (Text-fig. 61) with a moderately long projection. Distal end of dorsal gonocoxal process comparatively long and strikingly prominent in lateral view (Text-fig. 61). Stylus (Text-fig. 62) very broad proximally, terminating in a gradually narrowing hook. Ventral lobe as in the preceding species. Aedeagus comparatively small, in lateral view (Text-fig. 64) with the proximal part of phallus dilated like a balloon; in dorsal view (Text-fig. 65) quite slender, as usual in the genus. Tergite 8: Text-fig. 66. Sternite 8: Text-fig. 67.

Total length 6·0–6·8 mm.

♀. Unknown.



Figs 61–67. Male terminalia of *Schoutedenomyia macroptera*, holotype. 61, genitalia in lateral view; 62, right gonocoxite in intero-ventral view; 63, epandrium in dorsal view; 64, aedeagus in lateral view; 65, aedeagus in dorsal view; 66, tergite 8; 67, sternite 8. Scale: 0·5 mm.

DISTRIBUTION. Tanzania and Mozambique.

MATERIAL EXAMINED.

Holotype ♂, TANZANIA: Nyassa-See, Langenburg, 12.v.1899 (*Fülleborn*) (ZMB); the specimen has lost both front legs, parts of the other legs and both third antennal segments.

MOZAMBIQUE: Tumbine Mountain, Milange, 1 ♂, vii. 1957 (*B. & P. Stuckenberg*) (NM).

Schoutedenomyia congoensis Kröber

(Text-figs 3, 4, 20, 26)

Schoutedenomyia congoensis Kröber, 1936 : 257. Holotype ♀, ZAIRE (MCT) [examined].

DIAGNOSIS. ♂. Unknown.

♀. Frons with a tomentose stripe along entire eye-margin (Text-fig. 3). First and third antennal segments of equal length (Text-fig. 4). 2 *sa* and 2 *sc* setae. Wing unicolourous (Text-fig. 26). Cell R_4 very long, more than 4 times as long as wide, and cell M_3 closed. Halteres brownish. Front leg slender (Text-fig. 20).

REDESCRIPTION. ♂. Unknown.

♀. *Head* (Text-figs 3, 4). Facial index 0·61. Frons comparatively narrow, its width at level of anterior ocellus 0·30 mm and at level of antennae 0·65 mm. Head in lateral view with a rather broad gena, a comparatively slender proboscis, and the antennae directed downwards. First and third antennal segments of equal length. Style short and narrow, i.e. not conical. Head discoloured, but frons apparently with a distribution of shining blackish and greyish tomentose areas as shown in Text-fig. 3. The face is also greyish tomentose, but the gena may be blackish or brownish and have a short black pile. Occiput greyish tomentose below, more blackish grey above. About 15 post-ocular + occipital setae on each side. Antennae yellowish brown to darker brownish, not tomentose, antennal pile short and black.

Thorax. 2 *sa* setae, 2 *sc* setae. Mesonotum discoloured, but apparently almost uniformly blackish with thin greyish tomentum. Mesonotal pile mainly yellowish. Scutellum and pleura also blackish, with greyish tomentum.

Wings (Text-fig. 26). Cell R_4 about 4 times as long as wide, i.e. remarkably long and narrow. Proximal part of vein R_4 almost straight, then downcurved, and apical part again more straight. Cell M_3 closed at wing-margin. Colour hyaline, with a distinct greyish brown tinge, most intensely along anterior margin. Veins and stigma dark brownish. Halteres brownish.

Legs (Text-fig. 20). F_1 with 1 short *av* seta. F_3 with 2–3 short *av* and *pv* setae at tip. T_1 and its metatarsus (Text-fig. 20) slender. T_1 with 5–7 *ad* setae which are shorter than tibial width, and 3 *pv* setae as long as tibial width. Coxae whitish grey tomentose. Femora, tibiae and tarsi brownish to dark brownish.

Abdomen. The pattern cannot be described because of extensive discolouration, but may be more or less as in *samaruensis*. The number of terminal spines cannot be given.

Total length 7·8 mm.

REMARKS. Kröber's description is adequate, but his illustration of the head in lateral view is quite misleading as can be seen by comparing his figure with Text-fig. 4. The generic name on Kröber's determination label reads 'Schoutedenia' and not *Schoutedenomyia*.

DISTRIBUTION. Zaire and Angola.

Material examined.

Holotype ♀, Zaire: Moanda, 24.viii.1920 (*Dr H. Schouteden*) (MCT); the specimen is discoloured by damp.

Angola: Luanda, 1 ♀, 9.x.1949 (*Malkin*) (CAS).

Schoutedenomyia signata sp. n.

(Text-figs 5, 6, 21, 27)

Diagnosis. ♂. Unknown.

♀. With a small tomentose area at eye-margin on middle of frons (Text-fig. 5). First antennal segment long. Wing with two broad, but imprecisely delimited brownish bands (Text-fig. 27). Cell R_4 about 3 times as long as wide, and cell M_3 long-petiolate. Halteres blackish. Front leg (Text-fig. 27) slightly stronger than in *congoensis*.

Description. ♂. Unknown.

♀. *Head.* (Text-figs 5, 6). Facial index 0·56. Frons as in Text-fig. 5. It is distinctly broader than in *congoensis*, its width at level of anterior ocellus 0·35 mm and at level of antennae 0·70 mm. Head in lateral view (Text-fig. 6) with gena rather broad and proboscis and palpus comparatively slender. First antennal segment distinctly longer than in *congoensis*; third segment lost. Frons almost entirely blackish, with only two small areas of greyish tomentum at eye-margin about midway between antennal bases and ocellar triangle. Lower part of frons raised and more polished than the rest, which appears dulled by fine punctures, but without a sharp line of demarcation. Face, genae and lateral areas of lower occiput with thin greyish tomentum. Other areas of occiput blackish, upper part polished. About 12 post-ocular and occipital setae on each side.

Thorax. The chaetotaxy cannot be described. Mesonotum blackish when seen from in front, with only thin tomentum, and thus appearing subshining. Seen from behind, two narrow tomentose stripes appear on the anterior part, while the posterior part in front of scutellum has a broad tomentose band. Mesonotal pile rubbed. Scutellum deep blackish in colour, from some angles with dark brownish tomentum. Pleura blackish and only thinly whitish grey tomentose, more shining on a stripe from pteropleuron to anterior part of hypopleuron.

Wings (Text-fig. 27). Cell R_4 about 3 times as long as wide. Vein R_4 narrowly S-curved. Cell M_3 long-petiolate. Colour greyish hyaline; apical fourth of wing brownish tinged, and discal cell with a band. Veins and stigma dark brownish. Halteres blackish.

Legs (Text-fig. 21). Only the right front leg preserved. F_1 with 2 small *av* setae; t_1 with 3–4 *ad*, *pd* and *pv* setae, all of which are shorter than width of t_1. T_1 and its metatarsus rather stronger than in *congoensis*. F_1 blackish brown, t_1 yellowish brown, tarsus darker brownish.

Abdomen. Seen from in front with the tergites covered by thin whitish grey tomentum, and with a brownish tinge on the first two tergites. Seen from above and from behind, all tergites blackish and shining with whitish grey lateral tomentose spots on tergites 2–4. The first tergites with the pile nearly all rubbed off, the last tergites with short, black and erect pile. The number of terminal spines cannot be given.

Total length 7·9 mm.

Material examined.

Holotype ♀, Zaire: Lusinga, Galerie riv. Lusinga, 25.v.1945 (*G. F. de Witte*) (IPNB).

Schoutedenomyia lindneri sp. n.

(Text-figs 7, 8, 22, 28)

[*Psilocephala aethiopica* (Bezzi) sensu Lindner, 1955 : 20. Misidentification.]

Diagnosis. ♂. Unknown.

♀. With a small tomentose area at eye-margin on middle of frons (Text-fig. 7), as in *signata*, but wings unicolourous (Text-fig. 28). Cell R_4 about 3 times as long as wide, and cell M_3 short-petiolate. Halteres blackish brown. Front legs quite slender as in *congoensis* (Text-figs 20, 22).

Description. ♂. Unknown.

♀. *Head* (Text-figs 7, 8). Facial index 0·56. Frons as in Text-fig. 7; its width at level of anterior ocellus 0·30 mm and at level of antennae 0·70 mm. Head in lateral view (Text-fig. 8) with gena comparatively narrow and proboscis thick. First antennal segment slightly longer than third segment (ratio 40 : 38). Style very short and narrow. Pattern of frons practically as in *signata*. Face, genae and occiput with a very dark appearance, but this may be partly due to discolouration; these areas are certainly greyish tomentose in well-preserved specimens. About 12 post-ocular + occipital setae on each side. Antennae dirty brownish.

Thorax. 1 *sa* seta, 4 *sc* setae of equal length. Mesonotum seen from in front covered by rather thick whitish grey tomentum which has a brownish tinge on two stripes close to the mid-line, only the notopleura appearing blackish. Seen from behind, mesonotum with a cinnamon-brown median band (width ca 0·25 mm) flanked by two greyish bands (width ca 0·20 mm), and lateral parts of mesonotum blackish and subshining. Postalar calli and scutellum pale brownish black and shining when seen from behind, but scutellum with a tomentose appearance when seen from in front. Mesonotal pile consisting of short black erect hairs and longer yellowish adpressed hairs. Lower parts of mesopleuron and sternopleuron polished black, and pteropleuron brownish and without tomentum. Other parts of pleura with whitish grey tomentum.

Wings (Text-fig. 28). Cell R_4 3 times as long as wide. Proximal part of vein R_4 straight, followed by a deeply curved distal part. Cell M_3 short-petiolate. Colour greyish hyaline, with pale greyish brown veins and stigma. Halteres blackish brown.

Legs (Text-fig. 22). F_1 and f_2 without setae. F_3 with 2 short *av* setae near apex and some even shorter *pv* setae. T_1 and its metatarsus (Text-fig. 22) slender. T_1 with 2–4 *ad*, *pd* and *pv* setae, 1 or 2 of which may be as long as width of t_1. Coxae whitish grey tomentose. Femora blackish brown, slightly tomentose and densely covered with whitish scaly hairs. Tibiae and tarsi yellowish brown, the tarsi darker towards tips.

Abdomen. Seen from in front, tergites shining blackish to blackish brown, with postero-lateral corners of tergites 2–3 and larger areas of tergite 4 thinly whitish grey tomentose. Seen from behind with the same pattern, but with the tomentose areas less distinct. Pile short, whitish on lateral areas of tergites 1–3, blackish on the rest. 6 + 6 terminal spines, which are short and thick but sharply pointed.

Total length 8·7 mm.

Material examined.

Holotype ♀, Kenya: Nairobi, 20.vi.1952 (*D. O. Africa Exp.*), det. *Psilocephala aethiopica* Bezzi by Oldroyd, 1952 (SMNS).

Schoutedenomyia leclercqi sp. n.

(Text-figs 9, 10, 23, 29)

Diagnosis. ♂. Unknown.

♀. Frons without tomentose areas at eye-margin. First antennal segment shorter than third segment (Text-fig. 10). 1 *sa*, 2 *sc* setae. Wing (Text-fig. 29) unicolourous. Cell R_4 only 2·7 times as long as wide, and cell M_3 short-petiolate. Halteres blackish.

Description. ♂. Unknown.

♀. *Head* (Text-figs 9, 10). Facial index 0·68. Frons as in Text-fig. 9, its width at level of

anterior ocellus 0·35 mm and at level of antennae 0·75 mm. Head in lateral view (Text-fig. 10) with gena comparatively narrow and frontal protuberance lower than in preceding species. Proboscis of moderate size. Antennae may be more porrect than in other species. First antennal segment shorter and narrower than third segment (ratio 28 : 40). Style very short and narrow. Frons unicolourous blackish and smooth, but not polished because of thin greyish tomentum; upper part with an undulating depressed line. Face, genae and occiput blackish brown, only occiput thinly tomentose. About 15 post-ocular + occipital setae on each side. Antennae blackish, not tomentose; first segment with the pile very short and sparse.

Thorax. 1 *sa* seta, 2 *sc* setae. Colour of mesonotum blackish, dulled by greyish tomentum which is most distinct when seen from behind. Two narrow and broadly separated blackish stripes present in the holotype, but certainly due to discolouration by moisture; these stripes may well be pale tomentose in perfectly preserved specimens. Pile short, mainly blackish on anterior part, paler on posterior part. Scutellum coloured as mesonotum and with whitish pile. Pleura partly discoloured, but apparently thinly tomentose.

Wings (Text-fig. 29). Cell R_4 2·7 times as long as wide. Vein R_4 forming a narrow S. Cell M_3 short-petiolate. Colour hyaline with a greyish brown tinge, especially along the veins. Veins and stigma dark brownish to blackish. Halteres blackish.

Legs (Text-fig. 23). F_1 and f_2 with 1–2 short *av* setae. F_3 with 6 short *av* setae; *pv* setae absent. T_1 with about 5 *ad*, *pd* and *pv* setae, of which the dorsal setae are short and adpressed. T_1 and its metatarsus thickened (Text-fig. 23). Femora blackish brown to blackish, only thinly tomentose. Pile mainly whitish, and partly scaly. T_1 and its tarsus blackish. Tibiae and tarsi of p_2 and p_3 paler, yellowish brown to dark brownish.

Abdomen. All tergites uniformly blackish and very thinly greyish tomentose. A distinct pattern is not visible, but specimens in better condition may have a pattern of blackish and greyish tomentose areas. Pile short and consisting of both whitish and blackish hairs. The number of terminal spines cannot be given.

Total length 8·0 mm.

MATERIAL EXAMINED.

Holotype ♀, ZAIRE: Leopoldville, 8.x.1950 (*M. Leclercq*) (IRSNB).

Schoutedenomyia longeantennata sp. n.

(Text-figs 11, 12)

DIAGNOSIS. ♂. Unknown.

♀. Easily recognized by the very elongate first antennal segment and the subapical position of the style. Frons (Text-fig. 11) with only a small area of tomentum laterally. 1 *sa* and 2 *sc* setae. Wing unicolourous. Cell R_4 about 2·5 times as long as wide, and cell M_3 petiolate. Halteres yellowish brown. Femora yellowish brown.

DESCRIPTION. ♂. Unknown.

♀. *Head* (Text-figs 11, 12). Facial index 0·66. Frons (Text-fig. 11) comparatively short and broad, largely shining black with only two small wedge-shaped areas of whitish grey tomentum laterally. Head in lateral view with the gena very narrowly visible. Proboscis short, not reaching to level of antennal bases. Antennae directed downwards, their axes continuing the profile-line of the frons. First antennal segment very long, nearly twice as long as length of head, and about ten times as long as its maximum width. Third antennal segment one-third as long as first segment, tapering gradually. Antennal style not apical, but inserted into a groove on outer surface at base of apical third of segment 3. Third antennal segment yellowish in basal part, becoming dark brownish in more than apical half. Second and third segments blackish. First segment with the pile rather short but dense. About 10 post-ocular + occipital setae on each side. Face, lower occiput and broad post-ocular stripe whitish grey tomentose. Upper central part of occiput shining blackish.

Thorax. 1 *sa* seta, 2 short *sc* setae. Mesonotum subshining blackish with two indistinct paler greyish stripes. Mesonotal pile short, adpressed and yellowish. Scutellum shining black. Pleura thinly whitish grey tomentose.

Wings. Cell R_4 about 2·5 times as long as wide. Vein R_4 almost straight. Cell M_3 short-petiolate. Colour hyaline, with a greyish brown tinge. Veins and stigma dark brownish. Halteres yellowish brown.

Legs. Only the right p_1 and p_2 are preserved. F_1 with 2 small *av* setae. F_2 apparently without *av* setae. T_1 with 2–3 short *ad*, *pd* and *pv* setae, all of which are shorter than tibial width. T_2 with the usual four rows of setae, but one *ad* seta and one *av* seta appear to be extraordinarily strong. Coxae greyish, like the pleura. Femora and tibiae bright yellowish brown. Tarsi darkened.

Abdomen. Tergites shining blackish, with greyish tomentose areas on lateral parts of tergites 3 and 5. Sternites also predominantly shining blackish. Abdominal pile sparse and very short. 6 + 6 slender and pointed apical spines on ovipositor.

Total length 9·2 mm.

MATERIAL EXAMINED.

Holotype ♀, RHODESIA: Mt Selinda, xi–xii. 1930 (*R. H. R. Stevenson*) (CNC).

STENOPOMYIA gen. n.

Gender: feminine.

Type-species: *Stenopomyia keiseri* sp. n.

DESCRIPTION. *Head.* Male eyes touching, nearly touching, or separated by a comparatively broad frontal stripe (Text-figs 69, 71, 73). Upper facets of male eyes not enlarged. Male frons with various patterns formed by blackish, brownish or greyish tomentum, sometimes with more or less shining areas on lower part. Female frons (Text-figs 68, 70) always broader than male frons and often with a similar pattern to that of the male. Face short and widening slightly below. Facial indices varying between 0·32 and 0·47, i.e. the lowest values of the genera under treatment. Proboscis short, often reaching only to level of antennal base, or to about level of middle of first antennal segment. Labella broad. Palpi one-segmented, shorter than proboscis and usually with only a short pile. Male frons bare. Female frons usually with short black hairs. Genae usually not visible in lateral view. Lower occiput with whitish pile. Upper part of occiput with the post-ocular and occipital setae varying greatly in number. Antennae (Text-figs 75–86) usually with the first segment shorter than combined length of third segment and style. However, in the *variegata*-group the first antennal segment is longer than combined length of third segment and style. Antennal style usually long, but ratio of the two basal sections very variable. Total length of style more than 40 per cent of length of third antennal segment.

Thorax. 3 notopleural, 1–2 supraalar and 1 postalar setae. Dorsocentral setae never present. 2–4 scutellar setae. Colour very variable. Prosternum with whitish pile only on lateral areas. Sternopleuron entirely bare. Mesopleuron and metapleural callosity with moderately long and whitish pile. Pleura more or less tomentose, the tomentum of different colour in some species and thus forming a pattern.

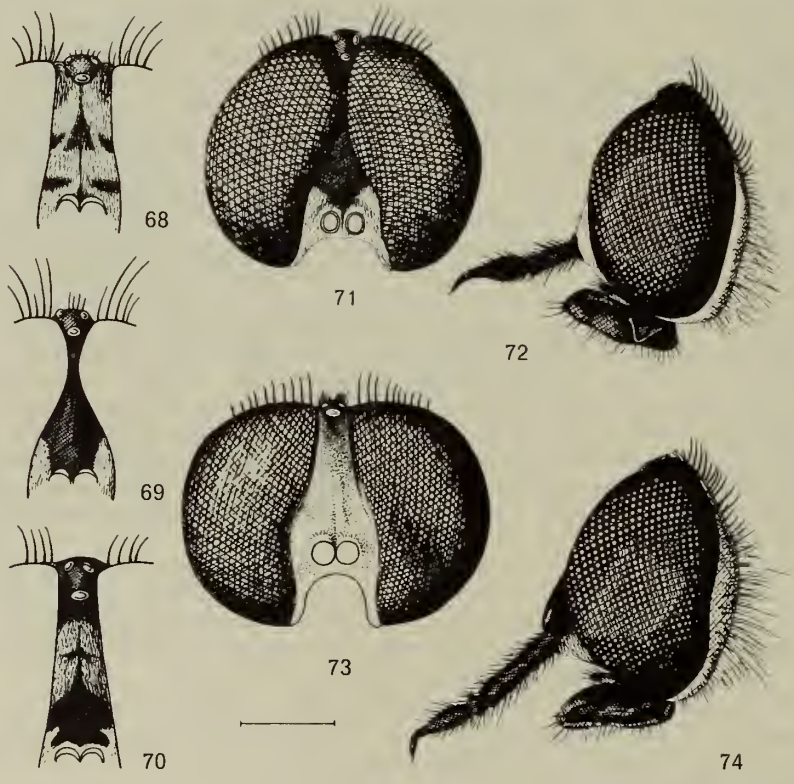
Wings. Cell R_4 usually long and narrow, and vein R_4 of variable curvature (Text-figs 87, 88). Cell M_3 usually more or less widely open, only rarely closed at wing-margin. Wing-colour hyaline or with a greyish, greyish brown or dark brownish tinge, sometimes more darkened apically than basally, but never distinctly banded.

Legs. Coxae usually of the same colour as pleura, but anterior and middle coxae distinctly paler than posterior coxae in a few species. Coxae never with pile on posterior surfaces. Hind femora with a few to several anteroventral setae; these are usually short, and some even shorter posteroventral setae may also occur. F_1 and f_2 without or with a few *av* setae. Front

tibiae with some *ad*, *pd* and *pv* setae, some of which are as long as or longer than width of t_1. T_2 and t_3 with rows of long *ad*, *pd*, *av*, and *pv* setae, and often with some additional and shorter true ventral setae.

Abdomen. Slender and cylindrical. The male abdomen shows strong interspecific variation in regard to colour. In some species the tergites are almost entirely shining, without tomentum or with only small areas of tomentum on posterior corners of the first tergites. Other species have the tergites practically entirely covered with a thick layer of tomentum, and all intermediate conditions occur. In some species the female abdomen is only slightly differentiated from the male abdomen; in other species there is a strong sexual difference. Abdominal pile is usually rather sparse and short.

Male terminalia. The epandrium shows a strong interspecific variation in size and shape. Most species show modifications in the shape, especially of the posterior margin. The cerci are always simple, and the paraproct forms a small sclerotized plate (Text-fig. 99) which never continues into a sclerotized area of the intersegmental membrane. The gonocoxite of rather uniform shape, always distinctly shorter than epandrium and with a more or less pronounced projection on posterior part, this projection only absent in *ostentata* (Text-fig. 89) which has a large rounded lobe posteriorly and more internally. The distal end of dorsal gonocoxal process of rather variable shape and length, but always rounded at apex; only specialized in *distincta* (Text-figs 132, 133). The same is true of the ventral lobe and the stylus. The stylus only

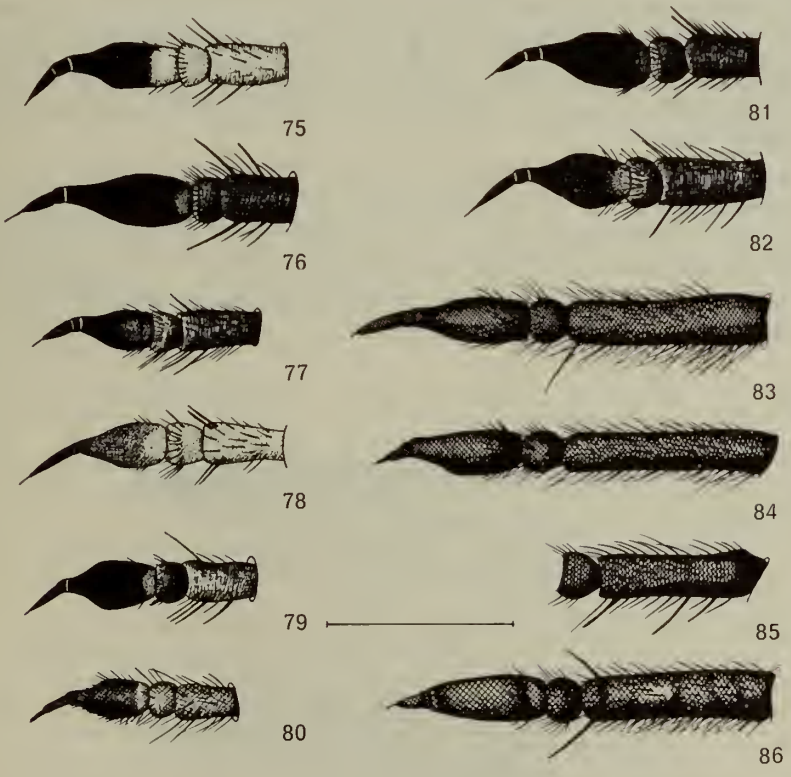


FIGS 68–74. *Stenopomyia.* 68, *S. ostentata*, ♀ frons; 69, *S. obscura*, ♂ frons; 70, *S. rhagioniformis*, ♀ frons; 71, *S. keiseri*, head in frontal view of ♂ holotype; 72, same in lateral view; 73, *S. angulata*, head in frontal view of ♂ holotype; 74, *S. variegata*, head in lateral view of ♂. Scale: 0·5 mm.

slightly curved and never forming an apical hook as in *Schoutedenomyia*. The ventral lobe is specialized in *distincta* (Text-fig. 133). The hypandrium (Text-fig. 113) is always small, free and situated between ventral bases of gonocoxites. The aedeagus is free, and is basically long and slender in shape, with the phallic part only slightly curved (sole exception: *ostentata* (Text-fig. 92)). The dorsal apodeme may be totally reduced as in *distincta*, but is usually 2 to 3 times as wide as proximal part of phallus; only in *ostentata* (Text-fig. 92) is the dorsal apodeme differently shaped. The ventral and ejaculatory apodemes are usually quite simple and comparatively slender. Tergite 8 is very narrow medially. Sternite 8 is well-developed and of rather variable shape.

Female terminalia. With two rows of terminal spines, as is usual in the group; the number varies between 4 and 7.

Remarks. The genus *Stenopomyia* consists of 13 species, and only one of these proves to be described. It is *variegata*, originally described in *Anabarhynchus* Macquart, which is a strictly Australian genus. In the Ethiopian region *Stenopomyia* seems to be restricted to Madagascar, where the late Dr Fred Keiser collected most



Figs 75–86. Antennae of *Stenopomyia*. 75, *S. ostentata*, ♂ holotype; 76, *S. obscura*, ♂ holotype; 77, *S. bidentata*, ♂ holotype; 78, *S. rhagioniformis*, ♂ holotype; 79, *S. brunnea*, ♂ holotype; 80, *S. minor*, ♂ holotype; 81, *S. keiseri*, ♂ holotype; 82, *S. angulata*, ♂ holotype; 83, *S. variegata*, ♂; 84, *S. fumipennis*, ♂ holotype; 85, *S. fuscata*, ♂ holotype; 86, *S. uncilobata*, ♂ holotype. Scale: 0·5 mm.

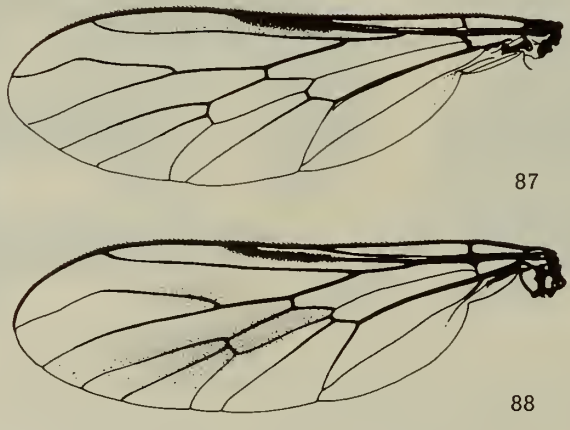
of the present material in 1958. The author has examined a number of Oriental species of the *Psilocephala*-group, but was unable to place any of them in *Stenopomyia*. However, dissections of the male terminalia were not made.

At present the author considers that *Stenopomyia* represents a monophyletic group. There are several characters which may be regarded as plesiomorphic; for example the rounded head with only slightly diverging facial margins resulting in facial indices between 0·32 and 0·47, the bare face, the presence of hairs only on the lateral parts of prosternum, the entirely bare sternopleuron, the bare posterior surface of cx_1 and cx_2, the comparatively long and slender cell R_4, and the open cell M_3.

As synapomorphic for the genus may be listed the entirely bare male frons, the strong modifications of the epandrium (especially its posterior margin), and the usually very slender and elongate aedeagus.

The two large and more advanced Ethiopian Therevid genera, *Irwiniella* and *Thereva*, have the prosternum haired all over, an entirely haired sternopleuron, presence of hairs on posterior surface of cx_1 and cx_2, dorsocentral setae usually present, and cell R_4 comparatively shorter and broader. The male frons of *Irwiniella* and *Thereva* may be bare, but is usually haired, the epandrium is usually simple or only slightly modified, and the aedeagus is basically broader and shorter. The small genus *Stenosathe* represents a transition between *Stenopomyia* and *Irwiniella*; see further on p. 247.

The relationship between *Stenopomyia* and *Schoutedenomyia* is less clear. *Schoutedenomyia* possesses many of the plesiomorphic characters mentioned above for *Stenopomyia*, while others are present in a more apomorphic state in *Schoutedenomyia*, such as the shortened antennal style, the usually petiolate cell M_3, and the partial reduction of the setae on t_1. *Schoutedenomyia* has further apomorphies in the male terminalia (see p. 205) and a strongly plesiomorphic character in the two-segmented palpus.



Figs 87, 88. Wings of *Stenopomyia*. 87, *S. variegata*; 88, *S. brunnea*. Scale: 0·5 mm.

Key to Species of *STENOPOMYIA*

1 First antennal segment shorter than combined length of third antennal segment and style (Text-figs 75–82) 2
– First antennal segment longer than combined length of third antennal segment and style (Text-figs 83–86) 14
2 Minimum width of frontal stripe shorter than or equal to width of anterior ocellus (Text-figs 69, 71) 3
– Minimum width of frontal stripe larger than width of anterior ocellus (Text-figs 68, 70, 73) 6
3 Abdomen black, either almost entirely shining or entirely whitish grey tomentose. Femora brownish black to black. Antennae blackish 4
– Abdomen either black with yellowish brown posterior corners on tergites 4–6, or shining brownish. Femora yellowish or dirty brownish. Antennae yellowish, or at least paler on basal segments than on third segment 5
4 Abdomen almost entirely shining blackish. Eye-margins not actually touching on frons (Text-fig. 69) . . . . . ***obscura*** ♂ (p. 226)
– Abdomen entirely covered with whitish grey tomentum. Eye-margins almost touching for a short distance on frons (Text-fig. 71) . . ***keiseri*** ♂ (p. 228)
5 Tergites shining black with small whitish grey tomentose posterior corners on tergites 2–3 and yellowish brown non-tomentose posterior corners on tergites 4–6. Third antennal segment yellowish (Text-fig. 78) . . ***rhagioniformis*** ♂ (p. 234)
– Tergites mainly shining brownish, with only small areas of thin tomentum at posterior margins. Third antennal segment blackish, paler at extreme base (Text-fig. 80) . . . . . ***minor*** ♂ (p. 238)
6 First three tergites yellowish brown and without tomentum, the following four tergites thickly covered with whitish grey tomentum . . ***distincta*** ♂ (p. 237)
– Without this pattern of tergal colour 7
7 Legs brownish black to black. Abdomen shining blackish with areas of whitish grey tomentum 8
– Legs yellowish brown to brown. Abdomen shining brownish 12
8 Frons and mesonotum seen from in front uniformly whitish grey tomentose, without any pattern. Males 9
– Frons and mesonotum seen from in front not uniformly whitish grey tomentose, as the frons is more or less dark or shining and the mesonotum has a pattern of darker bands. Females 10
9 Frontal width at level of antennae nearly three times as broad as width of frons at anterior ocellus (Text-fig. 73). Posterior margin of epandrium straight (Text-figs 109, 111) . . . . . ***angulata*** ♂ (p. 230)
– Frontal width at antennae two times as broad as width of frons at anterior ocellus. Posterior margin of epandrium with dentate processes (Text-figs 118, 120) ***bidentata*** ♂ (p. 232)
10 Ventral setae on f_3 very short, not to be compared in length with the tibial setae, about as long as the whitish, scaly hairs. Dark bands on mesonotum steely black, without a brownish tinge. Terminal spines of ovipositor very slender and pointed . . . . . ***angulata*** ♀ (p. 230)
– Ventral setae on f_3 longer, about as long as the shortest tibial setae. Dark bands on mesonotum brownish black 11
11 Terminal spines of ovipositor slightly broadened towards tips which are rounded. Lower part of frons dull brownish black. . . . . ***keiseri*** ♀ (p. 228)
– Terminal spines of ovipositor very slender and sharply pointed at tips. Lower part of frons subshining blackish . . . . . ***obscura*** ♀ (p. 226)
12 Fork of veins R_4 and R_5 situated at level of outer margin of discal cell, cell R_4 thus very long (Text-fig. 88). First and second antennal segments covered with dark

brownish tomentum, thus not distinctly paler than the blackish third antennal segment . . . . . ***brunnea*** ♀ (p. 236)

– Fork of veins R_4 and R_5 situated well beyond level of outer margin of discal cell, cell R_4 thus shorter. First and second antennal segments yellowish brown, much paler than the blackish third antennal segment 13

13 Mesonotum with a distinct black spot in front of *sa* setae. Frons (Text-fig. 70) narrower and with a large dull blackish area below . . ***rhagioniformis*** ♀ (p. 234)

– Mesonotum uniformly brownish grey in colour. Frons (Text-fig. 68) broader and with a narrow, transverse, dark brownish spot below . . ***ostentata*** ♂ ♀ (p. 224)

14 Femora yellowish to yellowish brown, always distinctly paler than their respective tibiae 15

– Femora brownish to brownish black, always distinctly darker than their respective tibiae –. 16

15 Cx_1 and cx_2 yellowish, distinctly paler than cx_3. Colour difference between f_3 and t_3 very striking, as femur is bright yellow and tibia black. Axillary cell of female wing not distinctly broader than anal cell . . ***variegata*** ♂ ♀ (p. 240)

– All coxae of the same colour. Colour difference between f_3 and t_3 not very striking. Axillary cell of female wing distinctly broader than anal cell ***fumipennis*** ♂ ♀ (p. 242)

16 Frons comparatively broad and gradually widening from level of anterior ocellus. This is very large, its width being about 0.12 mm. First antennal segment shorter (Text-fig. 85). Epandrium of male as in Text-figs 152, 154 ***fuscata*** ♂ ♀ (p. 242)

– Frons comparatively narrow and of almost equal width on upper part. Anterior ocellus smaller, its width being about 0.08 mm. First antennal segment longer (Text-fig. 86). Epandrium of male as in Text-figs 159, 163 . . ***uncilobata*** ♂ (p. 244)

The *KEISERI*-Group

The *keiseri*-group includes 9 species all of which are characterized by the short first antennal segment (Text-figs 75–82). This segment is always shorter than the combined lengths of third segment and style. The frontal callus is low, often hardly visible in lateral view (Text-fig. 72). The group is certainly not monophyletic. It includes four species in which the male eyes are touching or almost touching on frons in front of anterior ocellus (Text-figs 69, 71), while the male eyes of the other species are rather broadly separated. Both *ostentata* and *distincta* have strongly apomorphic characters in the male terminalia.

Stenopomyia ostentata sp. n.

(Text-figs 68, 75, 89–93)

Diagnosis. ♂ ♀. A brownish to brownish grey species. Both sexes with a comparatively broad frontal stripe which has a narrow, transverse dull band below. Basal antennal segments paler than third segment. Male terminalia greatly enlarged.

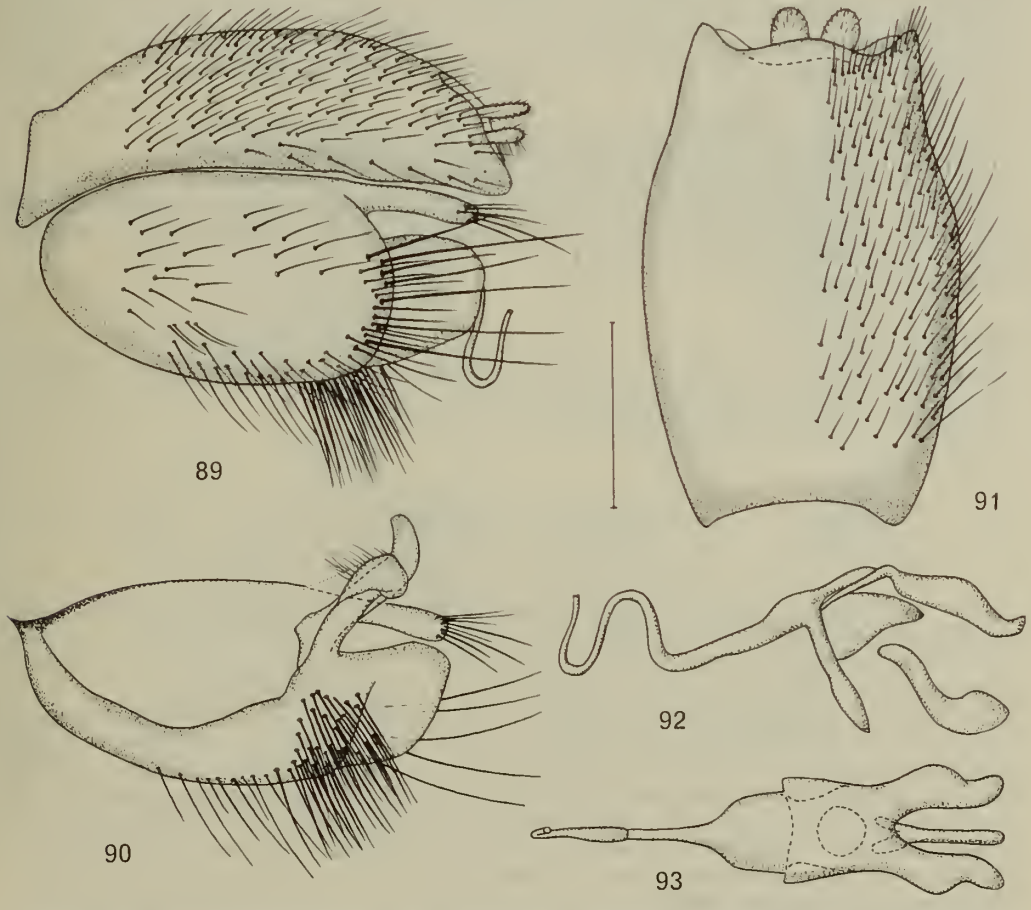
Description. ♂. *Head* (Text-fig. 75). Facial index 0·40. Eyes separated by a comparatively broad frontal stripe. Proboscis reaching only to level of antennal bases; labella very broad. Palpi a little shorter than proboscis, yellowish, with some pale hairs. Frons brownish and brownish grey tomentose, darkest on upper two-thirds and on a narrow band above antennae. Face greyish yellow tomentose. Occiput greyish tomentose below, more brownish grey tomentose above. About 17 post-ocular and occipital setae on each side, the upper post-oculars being long. First, second and base of third antennal segments pale brownish, only thinly tomentose; remainder of third segment and style black. First segment with a few black setae.

Thorax. Mesonotum dull greyish brown, with an indistinct pattern of darker brownish stripes. Mesonotal pile sparse, short and mainly dark. Scutellum paler than mesonotum, 4 *sc* setae, the lateral pair only slightly shorter than the subapical pair. Pleura greyish brown, like the mesonotum, but with a thin whitish tomentum giving a paler appearance. Mesonotum with only a few pale hairs above.

Wings. Cell M_3 widely open. Vein R_4 with the proximal section almost straight, but the distal section with a slight curvature. Colour uniformly brownish. Stigma and veins brownish black. Halteres brownish black.

Legs. F_1 without setae. Left f_2 with a short *pv* seta at apical fourth. F_3 with a short *av* seta at apex and 1–2 even shorter *pv* setae at apex. Colour of legs yellowish brown, apical tarsal segments blackish. Coxae thinly whitish tomentose, like the pleura. Femora very indistinctly tomentose, and femoral pile short, sparse, adpressed and mainly pale. Tibiae appearing darker than femora because of dense short black hairs.

Abdomen. All tergites and sternites shining yellowish brown to dark brownish, being palest on posterior parts. Whitish hind marginal seams distinct on segments 2–4. Pile moderately



FIGS 89–93. Male terminalia of *Stenopomyia ostentata*, holotype. 89, genitalia in lateral view; 90, right gonocoxite in intero-ventral view; 91, epandrium in dorsal view; 92, aedeagus in lateral view; 93, aedeagus in dorsal view. Scale: 0·5 mm.

long, blackish and adpressed on dorsal surface of tergites, whitish and more erect on lateral parts of tergites and on sternites.

Terminalia (Text-figs 89–93). Epandrium and gonocoxites greatly enlarged and shining brownish to brownish black; pile black. Epandrium as in Text-fig. 91. Gonocoxites broadly separated ventrally, their posterior margins broadly rounded and with many long setae. More internally the gonocoxite has a large rounded lobe which projects to near level of posterior margin of epandrium. Ventrally at base this lobe has a tuft of close-set, black, downwardly directed setae. Distal end of dorsal gonocoxal process long and narrow, its apex not reaching to level of posterior corner of epandrium. In ventral view (Text-fig. 90), the stylus appearing as a moderately long rod, gradually decreasing in width towards tip which is curved and blunt. Ventral lobe nearly as long as stylus and of rather complicated shape. Aedeagus very large. Phallus in lateral view (Text-fig. 92) with the proximal part forming a moderately thick tube, which is directed obliquely downwards, and with three strong bends in the distal part which gradually narrows. In dorsal view (Text-fig. 93), with the extreme proximal part rather broad and rapidly narrowing into the long distal part. Dorsal apodeme of rather complicated shape, in dorsal view (Text-fig. 93) with a deep distal cleft. Ventral apodeme directed downwards. Ejaculatory apodeme as in Text-fig. 92. Tergite 8 and sternite 8 not preserved intact in the dissection.

Total length 7·8 mm.

♀. *Head.* Facial index 0·38. Frons (Text-fig. 68) slightly broader above than in male. Otherwise as in male.

Thorax. Colour and chaetotaxy as in male, but right lateral *sc* seta absent.

Wings. Less intensely brownish coloured than in male.

Legs. As described for male, but f_2 without setae and f_3 with 2 *av* setae on left side.

Abdomen. All tergites and sternites of the same shining yellowish brown to dark brownish colour as in male, the anterior parts of the posterior tergites being darkest. 6 + 6 terminal spines which are rather long and thick.

Total length 7·3 mm.

Material examined.

Holotype ♂, Madagascar: Tan., Ambohitantely, 10.vi.1958 (*Fred Keiser*) (NMB).
Paratype. ♀, same data and depository as holotype.

Stenopomyia obscura sp. n.

(Text-figs 69, 76, 94–101)

Diagnosis. ♂ ♀. A brownish black to blackish species. Abdomen shining in both sexes and with only small areas of tomentum. Male frons very narrow above (Text-fig. 69), female frons subshining black below. Antennae black. Both sexes with some long ventral setae on hind formora. Terminal spines of female abdomen very slender and pointed.

Description. ♂. *Head* (Text-figs 69, 76). Facial index 0·42. Eyes practically touching for a short distance. Proboscis reaching to level of middle of first antennal segment; labella broad and blackish. Palpi much shorter than proboscis, blackish, with pale hairs. Upper frons and central area of lower frons down to antennae dull blackish brown. Lateral areas of lower frons, face, genae and lower occiput whitish to whitish grey tomentose. Upper part of occiput more brownish grey, with about 32 post-ocular and occipital setae on each side. Some of the upper post-oculars very long. Antennae black, first two segments thinly greyish tomentose. Pile short and black.

Thorax. Mesonotum almost uniformly brownish black; two indistinct narrow traces of slightly paler stripes. Mesonotal pile moderately long and blackish. Scutellum brownish black, with blackish pile, 4 *sc* setae of almost equal size. Pleura with a dark brownish streak

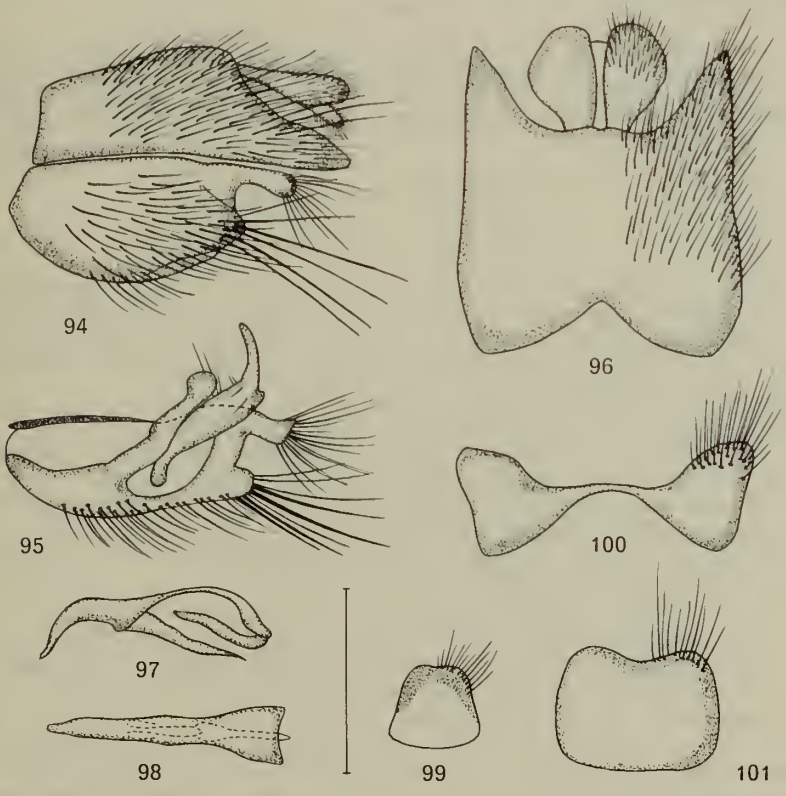
from below wing-base over lower part of mesopleuron to anterior part of sternopleuron. Hypopleuron also mainly dark brownish. Pleura otherwise whitish grey tomentose.

Wings. Cell M_3 widely open. Vein R_4 with proximal section almost straight, distal section with a moderately deep curvature. Colour brownish grey, most intensely on anterior part. Stigma and veins blackish brown. Halteres blackish.

Legs. F_1 and f_2 without setae. F_3 with 3 rather long *av* setae and a similar number of shorter *pv* setae, all situated in apical half. Coxae whitish grey tomentose. Femora, tibiae and tarsi blackish brown to blackish. Femoral pile consisting of both whitish and blackish hairs. Claws and pulvilli normal.

Abdomen. All tergites shining blackish, with small areas of whitish grey tomentum situated as follows: lateral parts of tergite 1, postero-lateral corners of tergites 2–3, and small lateral spots on tergites 5–6. Pile moderately long and mainly black, only pale on lateral areas of tergites 1–3. Sternites shining blackish brown.

Terminalia (Text-figs 94–101). Epandrium and gonocoxites shining blackish and with blackish pile. Epandrium as in Text-fig. 96. Paraproct as in Text-fig. 99. No sclerotization of the intersegmental membrane. Gonocoxite (Text-fig. 94) much shorter than epandrium; its lower, posterior corner rounded and with some long strong setae. More dorsally the gonocoxite forming a flat lobe with a comparatively short and broad dorsal gonocoxal process which does not reach to level of posterior corners of epandrium. Proximal part of stylus



FIGS 94–101. Male terminalia of *Stenopomyia obscura*, holotype. 94, genitalia in lateral view; 95, right gonocoxite in intero-ventral view; 96, epandrium in dorsal view; 97, aedeagus in lateral view; 98, aedeagus in dorsal view; 99, paraproct; 100, tergite 8; 101, sternite 8. Scale: 0·5 mm.

(Text-fig. 95) rather narrow and suddenly constricted into a still narrower and slightly curved tip. Ventral lobe comparatively narrow, rounded at tip. Phallus in lateral view (Text-fig. 97) comparatively thick proximally, gradually narrowing and downcurved; in dorsal view (Text-fig. 98), of almost equal width throughout. Dorsal apodeme in lateral view (Text-fig. 97) comparatively short and downcurved, in dorsal view (Text-fig. 98) of equal width in proximal part and gradually widening in distal part. Ventral apodeme comparatively long, but narrow. Ejaculatory apodeme short and simple. Tergite 8: Text-fig. 100. Sternite 8: Text-fig. 101.

Total length 7·8 mm.

♀. *Head.* Facial index 0·46. Proboscis and palpi as in male, though labella may be somewhat larger. Frons mainly blackish, shining and wrinkled. Lateral areas of upper part a little brownish tomentose. Lateral areas of lower part of frons and rest of head, including antennae, as described for male, though upper post-oculars are shorter.

Thorax. Mesonotum with the two narrow, pale stripes a little more distinct than in male. Otherwise all characters of thorax as described for male.

Wings. Colour more intensely brownish than in male. Other characters as in male.

Legs. As described for male.

Abdomen. There is no sexual difference in the colour of tergites and sternites, which is unusual in Therevidae, but the pile is shorter. 5 + 5 terminal spines which are moderately long but very thin and sharply pointed.

Total length 8·0 mm.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Fia., Vohiparara, 13.ix.1958 (*Fred Keiser*) (NMB).
Paratypes. Same locality as holotype, 2 ♀, 15.ix.1958 (*Fred Keiser*) (NMB).

Stenopomyia keiseri sp. n.

(Text-figs 71, 72, 81, 102–108)

DIAGNOSIS. ♂ ♀. A brownish black to blackish species. In certain views, male abdomen entirely covered with whitish grey tomentum; female abdomen shining with small areas of tomentum. Eye-margins touching on male frons (Text-fig. 71). Female frons with a large, dull brownish area on lower part. Both sexes with some long setae on hind femora. Terminal spines at apex of female abdomen broadened towards tips.

DESCRIPTION. ♂. *Head* (Text-figs 71, 72, 81). Facial index 0·44. Eyes practically touching for a short distance. Proboscis reaching to level of middle of first antennal segment; labella broad and blackish. Palpi much shorter than proboscis, blackish, with thin greyish tomentum and short pale hairs. Most of frons brownish tomentose. Lower part of frons, face, genae and occiput whitish grey tomentose. Upper part of occiput with about 22 post-ocular and occipital setae on each side. Antennae blackish, first and second segments only thinly tomentose. Pile short and black.

Thorax. Mesonotum mainly brownish black, subshining, with two narrow, greyish stripes which are widely separated. Mesonotal pile moderately long and blackish. Scutellum brownish black on disc, slightly paler greyish brown along margin; its pile long and black, 4 *sc* setae of almost equal size. Pleura rather thickly whitish grey tomentose, lower half of mesopleuron and anterior part of sternopleuron more brownish.

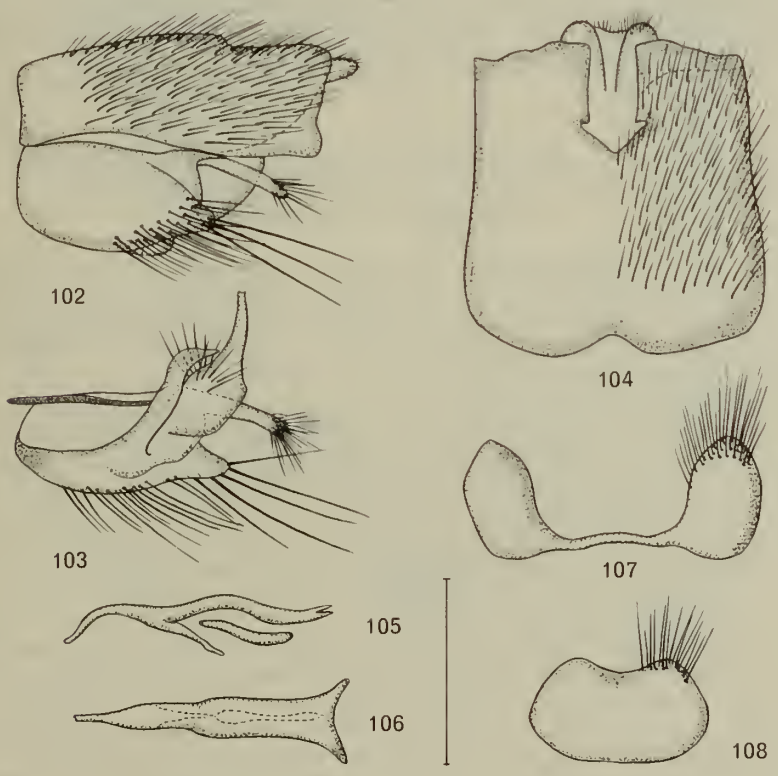
Wings. Cell M_3 narrowly open or closed at wing-margin. Vein R_4 with proximal section nearly straight, distal section with a moderately deep curvature. Colour almost uniformly brownish, though less intensely in basal part. Stigma darker brownish than rest of wing. Veins and halteres blackish.

Legs. F_1 with 1–3 *av* setae. F_2 with 1 *av* seta. F_3 with 2–3 rather long *av* setae and similar number of shorter *pv* setae, all situated in apical third. Coxae whitish grey tomentose like the pleura. Femora blackish, only very thinly tomentose. Pile on posterior surfaces of f_1 and

f_2 moderately long and whitish; shorter and more adpressed and dark on the other surfaces. Tibiae and tarsi dark brownish to brownish black, t_3 and tarsi being darkest.

Abdomen. All tergites thickly whitish grey tomentose, only extreme lateral margins of tergites 4–7 without tomentum and shining. Pile moderately long and whitish, but black on lateral parts of tergites 4–6 and also on disc of tergite 7. Whitish hind-marginal seams distinct on tergites 2–4. Sternites blackish brown and shining. Pile whitish on sternites 1–3, blackish on the rest.

Terminalia (Text-figs 102–108). Epandrium and gonocoxites shining blackish with black pile. Epandrium as in Text-fig. 104. Gonocoxite (Text-fig. 102) much shorter than epandrium; its lower, posterior corner rounded and with some long and strong setae. More dorsally the gonocoxite, forming a flat lobe, carries the narrow and comparatively long distal end of dorsal gonocoxal process which does not reach to level of posterior margin of epandrium. Proximal part of stylus very thick and clearly visible in both lateral (Text-fig. 102) and ventral (Text-fig. 103) views. Stylus rather abruptly narrowing into a slender distal part. Ventral lobe comparatively narrow, rather long, its tip curved. Phallus in lateral view (Text-fig. 105) forming a rather long, narrow and gradually curved tube, which in dorsal view (Text-fig. 106) is about thrice as wide proximally as distally. Dorsal apodeme (Text-fig. 105) in lateral view with two bends, in dorsal view (Text-fig. 106) of equal width for a long distance; distal part



Figs 102–108. Male terminalia of *Stenopomyia keiseri*, holotype. 102, genitalia in lateral view; 103, right gonocoxite in intero-ventral view; 104, epandrium in dorsal view; 105, aedeagus in lateral view; 106, aedeagus in dorsal view; 107, tergite 8; 108, sternite 8. Scale: 0·5 mm.

with two narrow projections. Ventral apodeme short and narrow. Ejaculatory apodeme short and simple. Tergite 8: Text-fig. 107. Sternite 8: Text-fig. 108.

Total length 6·7–8·2 mm.

♀. *Head.* Facial index 0·46. Frons with lower half dull brownish black to near antennal bases; upper half more greyish tomentose though still dark. Other characters as in male.

Thorax. Colour and pile practically as in male, though the two narrow, greyish stripes on mesonotum are broader and more diffusely demarcated, and the pile is shorter.

Wings. Cell M_3 open in both specimens. Colour much paler than in male, greyish hyaline with brownish black stigma and veins.

Legs. As described for male.

Abdomen. Tergites shining blackish, with the following areas thinly whitish grey tomentose: lateral parts of tergite 1, postero-lateral corners of tergites 2–3, and lateral parts of tergites 5–6. Pile short and blackish, only whitish on tomentose areas of tergites 1–3. Sternites as in male. 5 + 5 terminal spines which are moderately long, broader towards apex and blunt-tipped.

Total length 7·8–8·8 mm.

Material examined.

Holotype ♂, Madagascar: Tam., Perinet, 5.x.1958 (*Fred Keiser*) (NMB).

Paratypes. Madagascar: Tam., Perinet, 3 ♂, 26.ix.–5.x.1958 (*Fred Keiser*); Tam., Moramanga, 1 ♂, 9.x.1958 (*Fred Keiser*); Fia., Vohiparara, 1 ♂, 1 ♀, 12 & 15.ix.1958 (*Fred Keiser*); Fia., Ambatolahy, 1 ♀, 14.ix.1958 (*Fred Keiser*). 2 ♂ and 1 ♀ paratypes in ZMC, other paratypes in NMB.

Stenopomyia angulata sp. n.

(Text-figs 73, 82, 109–117)

Diagnosis. ♂♀. A blackish species. Seen from in front, male with whitish grey tomentum on frons, mesonotum and most of abdomen. Male frons rather wide above (Text-fig. 73). Both sexes with blackish antennae and very short ventral setae on hind femora. Terminal spines at tip of female abdomen very thin and pointed. Female mesonotal bands steely black, not brownish black as in *keiseri* and *obscura*.

Description. ♂. *Head* (Text-figs 73, 82). Facial index 0·41. Eyes well-separated, a comparatively wide frontal stripe present. Proboscis reaching to level of about middle of first antennal segment; labella broad. Palpi much shorter than proboscis, greyish black, with short pale hairs. Frons, face and genae silvery whitish grey tomentose. Lower part of occiput whitish grey tomentose and with long, whitish hairs. Upper part of occiput more subshining blackish, with about 18 post-ocular + occipital setae on each side. Antennae blackish, first and second segments with thin greyish tomentum; pile short and black.

Thorax. When seen from in front, mesonotum appearing whitish grey tomentose. Seen from behind, mesonotum subshining blackish with two narrow stripes of whitish grey tomentum. Mesonotal pile rather short (0·10–0·12 mm) and consisting of both whitish and blackish hairs in variable ratios. Scutellum with the same pattern and pile as mesonotum; with 4 *sc* setae, of which the lateral pair is distinctly shorter than the subapical pair or totally absent. Pleura appearing dark in lateral view, whitish grey tomentose in dorsal view.

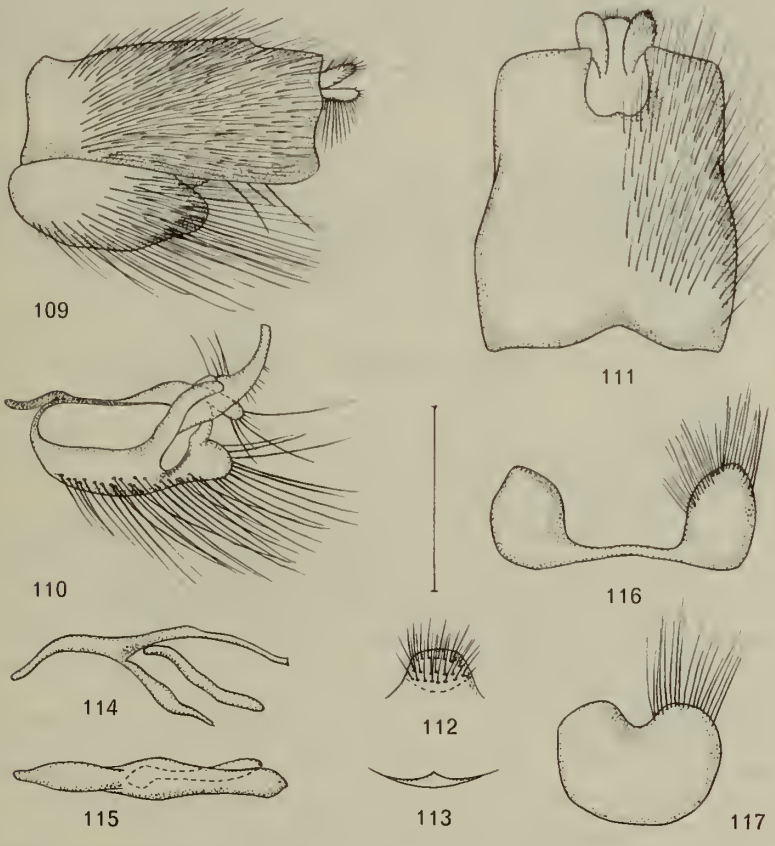
Wings. Cell M_3 open. Vein R_4 with proximal section almost straight, distal section with a deep curvature. Colour greyish brown, most intensely in apical half. Stigma and veins blackish brown. Halteres blackish.

Legs. Femora without setae comparable in length with the tibial setae, but with very short, spine-like setae on ventral surface, more or less distinctly arranged into anteroventral and posteroventral rows. Coxae intensely whitish grey tomentose. Femora blackish, not dulled

by tomentum, but with whitish scaly hairs, especially on posterior surfaces; also with erect blackish hairs. Tibiae and tarsi also blackish.

Abdomen. Seen from in front, tergites 1–6 appearing whitish grey tomentose with posterior corners of tergite 4 blackish. Seen from behind with the central area and anterior half of the lateral areas of tergites 1–3 deep black, and posterior half of lateral areas whitish grey tomentose. Tergite 4 entirely deep black. Tergites 5–6 whitish grey, with large areas on middle shaped like hour-glasses and deep blackish. Tergite 7 black. Whitish hind-marginal seams distinct on tergites 2–5. Pile rather long and adpressed, whitish on tergites 1–3, except on anterior parts of lateral areas of tergites 2–3 where it is blackish. The following tergites mainly blackish haired, but with many whitish hairs intermixed on the central area of tergites 4–6. Sternites blackish, only very thinly tomentose. Pile of sternites 1–3 whitish, of sternites 4–7 black.

Terminalia (Text-figs 109–117). Epandrium and gonocoxites shining blackish with black pile. Epandrium as in Text-fig. 111. Paraproct forming a small, weak sclerite (Text-fig. 112) which is not connected with sclerotized areas on the intersegmental membrane. Gonocoxite (Text-fig. 109) small in comparison with epandrium and with an evenly rounded posterior margin; distal end of dorsal gonocoxal process short. Stylus comparatively long and narrow,



FIGS 109–117. Male terminalia of *Stenopomyia angulata*, holotype. 109, genitalia in lateral view; 110, right gonocoxite in intero-ventral view; 111, epandrium in dorsal view; 112, paraproct; 113, hypandrium; 114, aedeagus in lateral view; 115, aedeagus in dorsal view; 116, tergite 8; 117, sternite 8. Scale: 0·5 mm.

as is also the ventral lobe. Hypandrium (Text-fig. 113) short and narrow. Phallus in lateral view (Text-fig. 114) forming a rather long and gradually curved tube, in dorsal view (Text-fig. 115) widest at middle. Dorsal apodeme (Text-fig. 114) gradually curved and in dorsal view (Text-fig. 115) very narrow. Ventral apodeme also narrow. Ejaculatory apodeme rather long and simple. Tergite 8: Text-fig. 116. Sternite 8: Text-fig. 117.

Total length 7·8–8·6 mm.

♀. *Head.* Facial index 0·40. Frons and face a little broader than in male. Frons in dorsal view distinctly tomentose, in frontal view subshining blackish except for lower part. Other characters as in male.

Thorax. When seen from in front, mesonotum appearing blackish grey and subshining with two narrow, broadly separated, whitish grey tomentose stripes. When seen from behind, the stripes are still visible and the rest of mesonotum is deeper blackish and shining. Pile shorter than in male and entirely blackish. Scutellum and pleura as in male.

Wings and legs as described for male.

Abdomen. Tergites 1–3 shining blackish with lateral parts of tergite 1 and posterior corners of tergites 2–3 whitish grey tomentose. Tergite 4 entirely shining blackish. Tergites 5–6 whitish grey tomentose, with large blackish areas on middle shaped like hour-glasses. Remainder of abdomen shining blackish. Pile mainly blackish and rather short, only whitish on lateral and posterior part of tergite 1, along posterior margin of tergites 2–3, and on whitish grey areas of tergites 2–3. 6 + 6 terminal spines which are short, very slender and pointed.

Total length 8·5–9·8 mm.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Tam., Perinet, 25.ix.1958 (*Fred Keiser*) (NMB).

Paratypes. MADAGASCAR: Tam., Perinet, 22 ♂, 16 ♀, 22.ix.–5.x.1958 (*Fred Keiser*) (NMB & ZMC); Tam., Moramanga, 1 ♂, 9.x.1958 (*Fred Keiser*) (NMB); Fia., Vohiparara, 5 ♂, 1 ♀, 12–13.ix.1958 (*Fred Keiser*) (NMB & ZMC).

Stenopomyia bidentata sp. n.

(Text-figs 77, 118–124)

DIAGNOSIS. ♂. Very similar to the male of *angulata*, but smaller and frontal stripe less strongly widening towards level of antennae.

♀. Difficult to distinguish from the female of *angulata* (see below).

DESCRIPTION. ♂. *Head* (Text-fig. 77). Eyes well separated: a comparatively broad frontal stripe present. Facial index 0·39. Proboscis reaching to level of about middle of first antennal segment; labella broad. Palpi much shorter than proboscis, slender and blackish, pile very sparse. Frons, face and genae silvery whitish grey tomentose. Lower part of occiput whitish grey tomentose and with long, whitish hairs. Upper part of occiput more dark greyish, with only 8–10 post-ocular + occipital setae on each side. Antennae blackish, first and second segments slightly tomentose, pile short and black.

Thorax. When seen from in front, mesonotum appearing very intensely whitish grey tomentose, without any pattern. Seen from behind, mesonotum subshining blackish with two narrow, whitish grey stripes in front. Mesonotal pile short and whitish. Scutellum with same pattern and pile as mesonotum. Only 2 *sc* setae but an additional short, lateral seta present on one side in the paratype. Pleura whitish grey tomentose.

Wings. Cell M_3 open. Vein R_4 with proximal section almost straight, apical section with a deep curvature. Colour greyish hyaline in proximal half, brownish grey in distal half, but without any distinct line of demarcation. Stigma and veins brownish black. Halteres blackish.

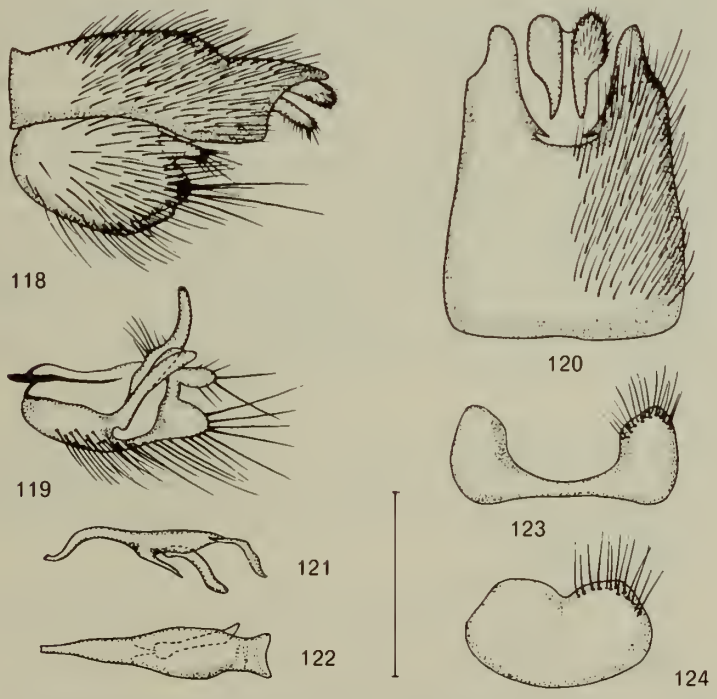
Legs. Femora without long ventral setae, with only very short setulose hairs on ventral

surfaces, especially on f_3. Coxae whitish grey tomentose. Femora blackish brown, not dulled by tomentum, with short whitish pile and some of the hairs on posterior surface of femora scaly. Tibiae and tarsi blackish brown.

Abdomen. Seen from in front, tergites 2–3 shining blackish on anterior two-thirds and whitish grey tomentose on posterior third; tergite 1 shining blackish medially and whitish grey laterally. Tergite 4 entirely shining blackish, and tergites 5–6 entirely whitish grey tomentose. Seen from behind, tergites 2–3 blackish on middle down to hind-margin, so that only posterior half of lateral areas is whitish grey tomentose. Tergite 4 still shining blackish, and tergites 5–6 with dark areas on middle shaped like hour-glasses. Tergite 7 black. Pile rather long and black on black areas, whitish on tomentose areas. Hind-marginal seams distinct on tergites 2–3. Sternites blackish with posterior parts of sternites 2–3 slightly tomentose. Pile whitish on sternites 1–3, blackish on the rest.

Terminalia (Text-figs 118–124). Epandrium and gonocoxites shining blackish with black pile. Epandrium as in Text-fig. 120. Gonocoxite (Text-fig. 118) small, with rounded posterior margin. Distal end of dorsal gonocoxal process projecting slightly above level of posterior margin of epandrium. Stylus (Text-fig. 119) long and narrow. Ventral lobe long and broad. In lateral view phallus (Text-fig. 121) forming a rather long, curved tube, which in dorsal view (Text-fig. 122) is narrow proximally and slightly narrowed towards tip. Dorsal apodeme (Text-fig. 121) rather short, distal part downcurved, in dorsal view (Text-fig. 122) twice as broad as proximal part of phallus. Both ventral and ejaculatory apodemes comparatively reduced. Tergite 8: Text-fig. 123. Sternite 8: Text-fig. 124.

Total length 6·1–6·4 mm.



FIGS 118–124. Male terminalia of *Stenopomyia bidentata*, holotype. 118, genitalia in lateral view; 119, right gonocoxite in intero-ventral view; 120, epandrium in dorsal view; 121, aedeagus in lateral view; 122, aedeagus in dorsal view; 123, tergite 8; 124, sternite 8. Scale: 0·5 mm.

♀. Very similar to female of *angulata* (see above). Facial index 0·40. As in male, lower frons and face narrower, and third antennal segment and style shorter (cf. Text-figs 77, 82).

Total length 8·5 mm.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: D.-S., Joffreville, 13.v.1958 (*Fred Keiser*) (NMB).

Paratypes. Same locality as holotype, 1 ♂, 1 ♀, 13 & 25.v.1958 (*Fred Keiser*) (NMB & ZMC).

Stenopomyia rhagioniformis sp. n.

(Text-figs 70, 78, 125–131)

DIAGNOSIS. ♂. Easily recognized in the group by the combination of contiguous eyes, yellowish antennae and legs, and tergites shining black to yellowish brown with only small areas of tomentum.

♀. Abdomen completely shining brownish yellow and a black mesonotal spot in front of supraalar setae.

DESCRIPTION. ♂. *Head* (Text-fig. 78). Facial index 0·34. Eyes practically touching for rather a long distance. Proboscis reaching to level of middle of first antennal segment; labella broad and yellowish. Palpi much shorter than proboscis, slender, yellowish and with short pale hairs. Frons, face, genae and occiput whitish grey tomentose, only extreme dorsal part of occiput brownish grey tomentose, and also upper part of frons darkened. Upper part of occiput with about 20 post-ocular and occipital setae on each side; some of the upper post-oculars long. First, second and base of third antennal segment yellowish and hardly tomentose; rest of third segment becoming gradually darker towards tip; style entirely black. Pile short and black.

Thorax. Mesonotum with three brownish bands which are dulled by greyish tomentum but are still subshining. Two narrow and broadly separated stripes of yellowish grey tomentum. Posterior and lateral parts distinctly whitish grey tomentose. Mesonotal pile moderately long and dark. Disc of scutellum of the same colour as mesonotum, margin broadly yellowish brown; its pile dark. Number of scutellar setae not constant: 4 *sc* setae are present in only 3 specimens, whilst only 3 *sc* setae are present in five specimens, including the holotype, as the lateral seta is absent on left or right side. In five specimens, only the subapical pair is present. Pleura evenly and rather intensely whitish grey tomentose.

Wings. Cell M_3 open. Vein R_4 with proximal section almost straight, apical section with a moderately deep curvature. Colour greyish brown. Stigma brownish. Veins blackish. Halteres brownish.

Legs. F_1 with a single *av* seta near middle. F_2 without setae. F_3 with 1–2 moderately long *av* setae near tip, and a row of about 5 shorter *pv* setae in apical half. Cx_1 and cx_2 yellowish, cx_3 brownish; all coxae thinly whitish grey tomentose. Femora yellowish, their pile short, very sparse and mainly pale; some dark, scaly hairs present on posterior and dorsal surfaces of f_3. Tibiae appearing darker than femora, but this mainly due to dense pile consisting of short, black hairs. Tarsi mainly blackish.

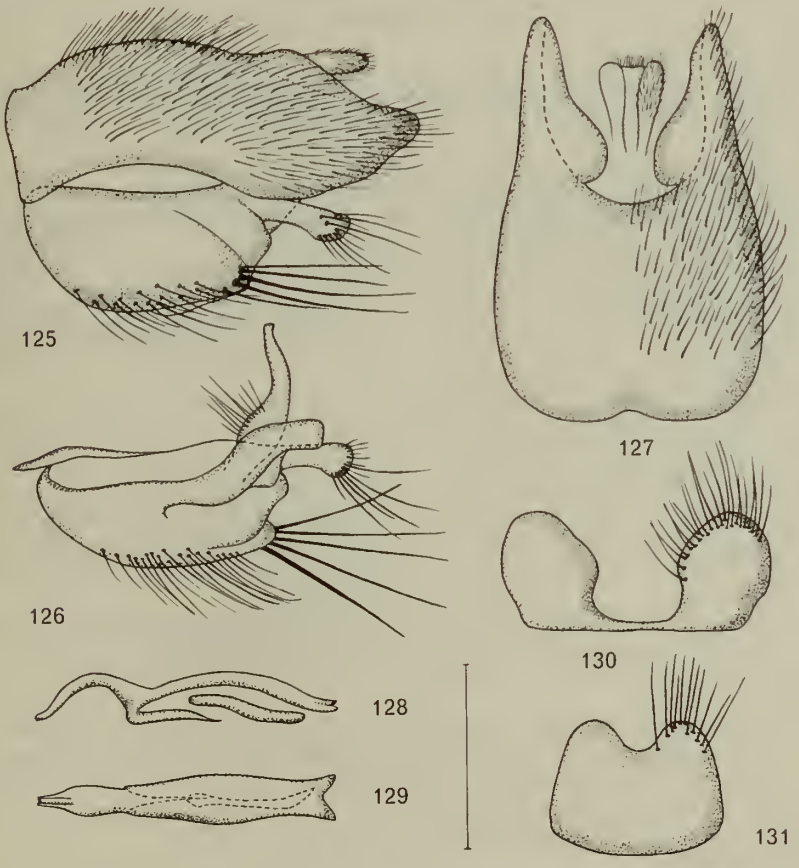
Abdomen. Tergite 1 mainly whitish grey tomentose, only darker on middle of anterior part. Anterior part of tergites 2–3 yellowish brown in varying degrees, sometimes very indistinctly so; remainder blackish to brownish and shining; on postero-lateral corners with a small area of whitish grey tomentum. Tergites 4–6 blackish brown to blackish and shining on dorsal surfaces; posterior and lateral areas yellowish brown in varying degrees. In dorsal view, often only a narrow stripe yellowish brown, but in some specimens a broader area on the posterior part yellowish brown; extreme lateral areas of these tergites always yellowish brown. Sternites yellowish brown, with more or less distinct blackish areas on middle. Pile on lateral parts of tergites 1–3 and of sternites 1–3 whitish, on rest of abdomen black.

Terminalia (Text-figs 125–131). Epandrium and gonocoxites shining blackish with black pile. Epandrium as in Text-fig. 127. Gonocoxite (Text-fig. 125) much shorter than epandrium; its lower, posterior corner rounded and with some long and strong setae. More dorsally, the gonocoxite forming a flat lobe bearing the broad distal end of the dorsal gonocoxal process, which does not reach to level of posterior corner of epandrium. In ventral view (Text-fig. 126) the very long and narrow stylus appears. Ventral lobe large. Phallus in lateral view (Text-fig. 128) narrow and gradually curved, in dorsal view (Text-fig. 129) rather thick. Dorsal apodeme in lateral view long and gradually curved, in dorsal view of almost equal width throughout. Ventral apodeme short and narrow. Ejaculatory apodeme simple. Tergite 8: Text-fig. 130. Sternite 8: Text-fig. 131.

Total length 6·2–8·9 mm.

♀. *Head* (Text-fig. 70). Facial index 0·36. Frons moderately broad; on lower part with a dull black area. Remainder of frons covered with greyish brown tomentum. Other characters as in male.

Thorax. Disc of mesonotum practically as in male, but lateral parts appearing paler, i.e. more translucent yellowish brown, and in front of supraalar setae with a well-marked black



Figs 125–131. Male terminalia of *Stenopomyia rhagioniformis*, holotype. 125, genitalia in lateral view; 126, right gonocoxite in intero-ventral view; 127, epandrium in dorsal view; 128, aedeagus in lateral view; 129, aedeagus in dorsal view; 130, tergite 8; 131, sternite 8. Scale: 0·5 mm.

spot. Scutellum and pleura also appearing yellowish brown, with only a thin layer of whitish tomentum.

Wings and *legs* as in male.

Abdomen practically all yellowish brown, shining, with small triangular areas of whitish tomentum at posterior corners of tergites 1–3. Tergites 6–7 more or less blackish. Pile very short and sparse. Terminal spines of ovipositor moderately long and sharply pointed.

Total length 7·8–9·6 mm.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: D.-S., Joffreville, 9.v.1958 (*Fred Keiser*) (NMB).

Paratypes. MADAGASCAR: D.-S., Joffreville, 12 ♂, 18 ♀, 8.–25.v.1958 (*Fred Keiser*) (NMB and ZMC).

Stenopomyia brunnea sp. n.

(Text-figs 79, 88)

DIAGNOSIS. ♂. Unknown.

♀. A brownish species with mesonotum evenly covered with dark brownish grey tomentum. Antennae dark brownish to blackish and fork of R_4 and R_5 situated at level of outer margin of discal cell.

DESCRIPTION. ♂. Unknown.

♀. *Head* (Text-fig. 79). Facial index 0·41. Proboscis reaching to level of middle of first antennal segment. Palpi much shorter than proboscis, narrow, brownish grey and with a few pale hairs. Frons discoloured in the holotype, but apparently dull brownish with a narrow band of a deeper brownish colour above antennal bases, without hairs. Face short and genae very narrow, both greyish brown. Lower part of occiput greyish tomentose. Upper part of occiput brownish grey tomentose and with 18 post-ocular and occipital setae on each side. The upper post-oculars long. Antennae blackish, first and second segments with slight greyish brown tomentum, pile of first segment short and blackish.

Thorax. Mesonotum dull, dark brownish grey, with a narrow darker brownish stripe along mid-line, and with traces of darker bands laterally. Pile short, adpressed and yellowish. Scutellum of the same colour as mesonotum; 4 *sc* setae, lateral pair about two-thirds as long as sub-apical pair. Pleura also brownish grey, but thinly whitish tomentose.

Wings (Text-fig. 88). Cell M_3 broadly open. Vein R_4 with proximal section long and straight, apical section evenly downcurved. Cell R_4 very long and narrow, arising at level of outer margin of discal cell. Colour greyish hyaline. Stigma and veins brownish black. Halteres brownish black.

Legs. F_1 and f_2 without setae. F_3 with 2 short *av* and 2 even shorter *pv* setae, all situated on apical third. Coxae coloured like the pleura. Femora, tibiae and tarsi yellowish brown, apical tarsal segments blackish. Femoral pile short and mainly whitish and scaly. Claws and pulvilli normal.

Abdomen. All tergites shining brownish black on anterior parts, more yellowish brown on posterior parts and laterally; the lines of demarcation between the darker and paler areas not very sharp. Sternites yellowish brown. Segments 2–4 with whitish hind-marginal seams. Pile on first three tergites pale and adpressed, on the following tergites blackish and erect. 8 + 8 terminal spines which are short and rather thick.

Total length 7·3 mm.

REMARKS. There is a second female specimen dating from 8.vi.1958 and collected at the same locality as the holotype. It differs in a few characters from the holotype: the mesonotum has a broader, dark brownish band along mid-line, the wings are

darker and the curvature of vein R_4 is different, the abdomen is much more distinctly banded into blackish brown and yellowish brown areas, and only 6 + 6 terminal spines are present. As the possibility cannot be excluded that this specimen represents a species distinct from *brunnea*, it has not been labelled as a paratype.

MATERIAL EXAMINED.

Holotype ♀, MADAGASCAR: Tan., Ambohitantely, 9.vi.1958 (*Fred Keiser*) (NMB).

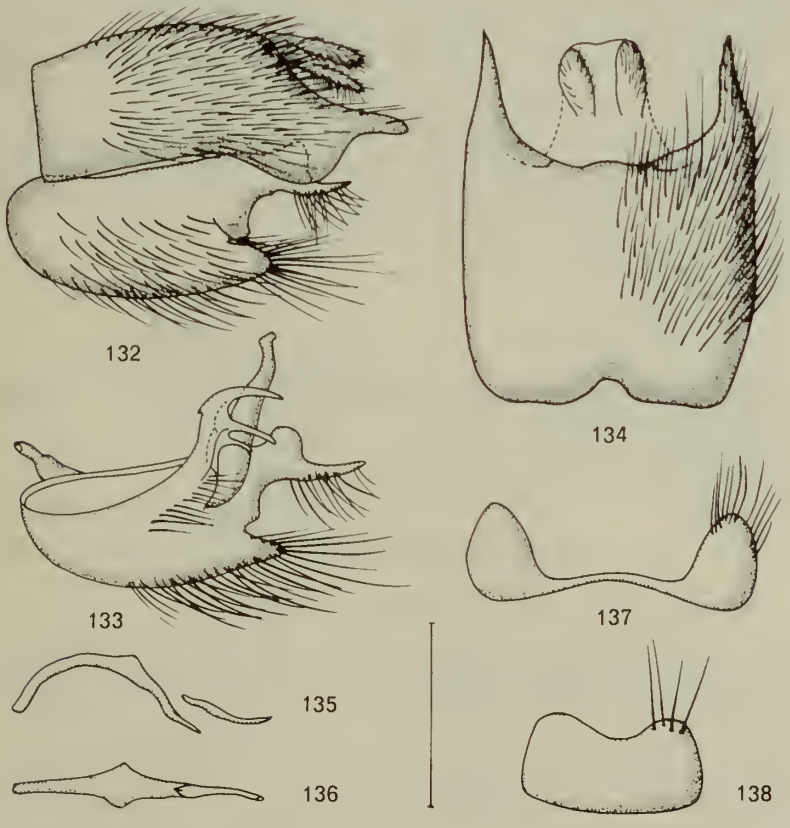
Stenopomyia distincta sp. n.

(Text-figs 132–138)

DIAGNOSIS. ♂. Easily distinguished from all other species of the genus by the differently coloured abdominal tergites. Eyes well-separated. F_3 yellowish, t_3 blackish.

♀. Unknown.

DESCRIPTION. ♂. *Head.* Facial index 0·32. Eyes separated by a narrow frontal stripe.



FIGS 132–138. Male terminalia of *Stenopomyia distincta*, holotype. 132, genitalia in lateral view; 133, right gonocoxite in intero-ventral view; 134, epandrium in dorsal view; 135, aedeagus in lateral view; 136, aedeagus in dorsal view; 137, tergite 8; 138, sternite 8. Scale: 0·5 mm.

Proboscis reaching to level of middle of first antennal segment and yellowish brown, like the much shorter palpi. Palpal pile short and pale. Frons seen from in front mainly dull black, narrowly silvery whitish tomentose above antennal bases. Seen from above, upper part of frons with greyish brown tomentum. Lower part of occiput silvery greyish tomentose, upper part more brownish grey tomentose. About 18 long post-ocular and occipital setae on each side. First and second antennal segments yellowish. Third antennal segment missing in holotype, in paratype yellowish brown at base but otherwise black (as in *brunnea*, Text-fig. 79).

Thorax. All parts yellowish brown and shining, pleura with very thin whitish tomentum. 4 strong *sc* setae.

Wings. Cell M_3 broadly open. Vein R_4 with a low curvature in proximal section, apical section with a moderately deep curvature. Colour brownish grey tinged, with brownish black stigma and veins. Halteres yellowish brown.

Legs. F_1 with 1–2 *av* setae. F_2 without setae. F_3 with a few *av* and *pv* setae at apex. Coxae and femora yellowish brown, f_3 slightly darkened at apex. Femoral pile very short and pale. T_1 and t_2 also brownish in colour but t_3 more blackish. All tibiae appearing darker because of dense, black pile. Tarsi darkened.

Abdomen. Tergites 1–2 and most of tergite 3 yellowish brown and shining. Tergites 4–7 with a thick covering of whitish grey tomentum. Postero-median area of tergite 3 also darkened by similar tomentum. Sternites 1–5 yellowish brown, rest of sternites darkened. Pile sparse, short and pale except on posterior sternites, where it is blackish.

Terminalia (Text-figs 132–138). Epandrium and gonocoxites shining blackish brown with black pile. Epandrium as in Text-fig. 134. Gonocoxite (Text-fig. 132) with a moderately long process ventrally. Distal end of dorsal gonocoxal process broadly looped proximally, ending in a sharply pointed tip. Ventral lobe (Text-fig. 133) very remarkable in shape, provided with three antler-like processes on apical posterior surface. Stylus long, gradually decreasing in width towards tip. Aedeagus with dorsal apodeme totally reduced. Phallic part rather long and gently curved. Entire aedeagus weakly sclerotized and pigmented. Tergite 8 as in Text-fig. 137. Sternite 8 as in Text-fig. 138.

Total length about 7·5 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Tulear Pr., Zombitsy Forest, 300 m, 22.iii.1968 (*K. M. Guichard & P. D.*). (BMNH).

Paratype. 1 ♂, same data as holotype.

Stenopomyia minor sp. n.

(Text-figs 80, 139–144)

DIAGNOSIS. ♂. A small, brownish black species with mainly shining abdomen, and mesonotum dulled by dark brownish tomentum. Eyes almost touching on frons for a short distance. Femora dirty brownish in colour.

♀. Unknown.

DESCRIPTION. ♂. *Head* (Text-fig. 80). Facial index 0·41. Eyes practically touching for a short distance. Proboscis reaching only to level of antennal base. Proboscis and the much shorter palpi dark brownish and with mainly pale hairs. Frons mostly dark brownish to brownish grey tomentose. Face, genae and lower part of occiput silvery whitish tomentose. Upper part of occiput brownish grey tomentose, with about 22 long post-ocular and occipital setae on each side. First, second and base of third antennal segment dark brownish and thinly whitish tomentose; rest of third segment and style black. Pile comparatively long and black.

Thorax. Mesonotum almost uniformly dark brownish and dull, with two indistinct paler brownish stripes. Mesonotal pile short and black. Scutellum coloured like the mesonotum, with 4 *sc* setae, the lateral pair shorter and weaker than the subapical pair. Pleura with a thin layer of whitish tomentum, upper part of mesopleuron slightly brownish.

Wings. Cell M_3 broadly open. Vein R_4 with only a slight curve on middle section. Colour uniformly greyish brown. Stigma, veins and halteres brownish black.

Legs. F_1 and f_2 without setae. F_3 with a single *av* and *pv* seta near tip. Legs almost uniformly dirty yellowish brown to brown. Pile on femora and tibiae mostly blackish.

Abdomen. Almost uniformly brownish to brownish black and shining. Tergites without any distinctly marked pattern, but lateral areas appearing paler. Small areas of whitish tomentum at postero-lateral corners of tergites 1–2 and 4–5. Pile short and sparse, consisting of both blackish and pale hairs.

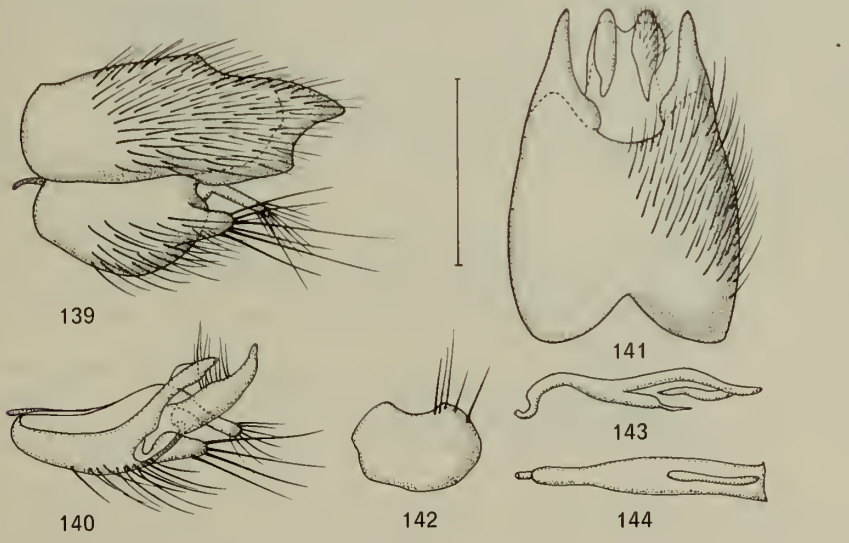
Terminalia (Text-figs 139–144). Epandrium and gonocoxites shining brownish black with black pile. Epandrium as in Text-fig. 141. Gonocoxite (Text-fig. 139) much shorter than epandrium, with a moderately long projection ventrally. Distal end of dorsal gonocoxal process comparatively long and slender. Stylus and ventral lobe (Text-fig. 140) of quite normal shape. Phallus in lateral view (Text-fig. 143) with a straight proximal section, then curved rather abruptly downwards at *ca* 90 degrees, the tip itself strongly upcurved; in dorsal view (Text-fig. 144), the phallus is narrow and gradually decreases in width. Dorsal apodeme small. Tergite 8 not preserved intact in the dissection. Sternite 8: Text-fig. 142.

Total length 4·8 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Tam., Moramanga, 9.x.1958 (*Fred Keiser*) (NMB).



FIGS 139–144. Male terminalia of *Stenopomyia minor*, holotype. 139, genitalia in lateral view; 140, right gonocoxite in intero-ventral view; 141, epandrium in dorsal view; 142, sternite 8; 143, aedeagus in lateral view; 144, aedeagus in dorsal view. Scale: 0·5 mm.

The *VARIEGATA*-Group

There are four species in the *variegata*-group, which is certainly monophyletic in origin and sister-group to a part of the *keiseri*-group. The group is characterized by the following synapomorphic features: antennal insertion low; frons protruding (> 0·10 mm); first antennal segment longer than the combined lengths of third antennal segment and style; and style comparatively short. The male terminalia seem to follow the ground-plan for the genus.

Stenopomyia variegata (Bigot) comb. n.

(Text-figs 74, 83, 87, 175–151)

Anabarhynchus variegatus Bigot, 1859 : 428; Kröber, 1913 : 267; Kröber, 1931 : 118. Holotype ♀, Madagascar (BMNH) [examined].

Diagnosis. ♂ ♀. Femora distinctly paler in colour than the corresponding tibiae (as in *fumipennis*). Cx_1 and cx_2 yellowish, not concolourous with cx_3 and pleura as is the case in *fumipennis*. Difference in colour between f_3 and t_3 very striking.

Redescription. ♂. *Head* (Text-figs 74, 83). Facial index 0·41. Eyes separated by a frontal stripe which is slightly wider above than width of anterior ocellus and gradually widens below. Proboscis reaching to level of antennal bases. Labella broad and brownish black. Palpi much shorter than proboscis, blackish grey with short pile of black and pale hairs. Seen from above, upper half of frons whitish grey tomentose. Central area of lower half of frons blackish and subshining. Lateral areas of lower frons, face, genae and lower part of occiput whitish grey tomentose. Upper part of occiput greyish black, with about 16 post-ocular and occipital setae on each side. Antennae blackish, not distinctly tomentose, pile short and black.

Thorax. Seen from above, mesonotum blackish with moderately thick greyish tomentum and without any distinct pattern. Seen from behind, mesonotum black with a large confluent area of tomentum on anterior part. Mesonotal pile short and black. Scutellum coloured like the mesonotum, with black pile and 4 *sc* setae of almost equal size. Seen from above with the following parts of pleura dull blackish: anterior part of sternopleuron, and entire pteropleuron and hypopleuron, the other parts whitish grey tomentose.

Wings (Text-fig. 87). Cell M_3 rather narrowly open. Vein R_4 with proximal section almost straight, apical section with a rather deep curvature. Colour dark brownish, most intensively in apical and anterior parts. Stigma only slightly darker than rest of wing. Veins and halteres blackish.

Legs. F_1 with 1–3 *av* setae. F_2 without setae. F_3 with 3–6 short *av* setae and 5–8 even shorter *pv* setae, all situated in apical two-thirds. Cx_1 and Cx_2 yellowish with thin whitish tomentum. Cx_3 brownish black with whitish tomentum. Femora yellowish, not tomentose, with short pale hairs. T_1, t_2 and all tarsi dark brownish, t_3 blackish. Colour difference between f_3 and t_3 very striking.

Abdomen. In dorsal view all tergites thickly covered with silvery whitish tomentum and whitish hairs. In lateral view the antero-lateral corners of tergites 2–3 and 5–6 and entire lateral areas of tergite 4 are shining blackish and with blackish pile. Sternites shining brownish black and with mainly blackish hairs. With distinct whitish hind-marginal seams on segment 2–5.

Terminalia (Text-figs 145–151). Epandrium and gonocoxites yellowish brown with black pile. Epandrium as in Text-fig. 147. Gonocoxite (Text-fig. 145) much shorter than epandrium and with a broadly rounded ventral projection. Distal end of dorsal gonocoxal process comparatively short and broad. Stylus and ventral lobe (Text-fig. 146) rather narrow and simple, stylus pointed. Phallus in lateral view (Text-fig. 148) only slightly curved, in dorsal view (Text-fig. 149) rather broad proximally and suddenly constricted towards the narrow tip. Dorsal apodeme in lateral view (Text-fig. 148) slightly downcurved, in dorsal view (Text-fig. 149)

of almost equal width throughout. Ventral and ejaculatory apodeme short and simple. Tergite 8: Text-fig. 150. Sternite 8: Text-fig. 151.

Total length 8·6–9·4 mm.

♀. *Head.* As in male, but frons broader and less striking in colour. Facial index 0·41.

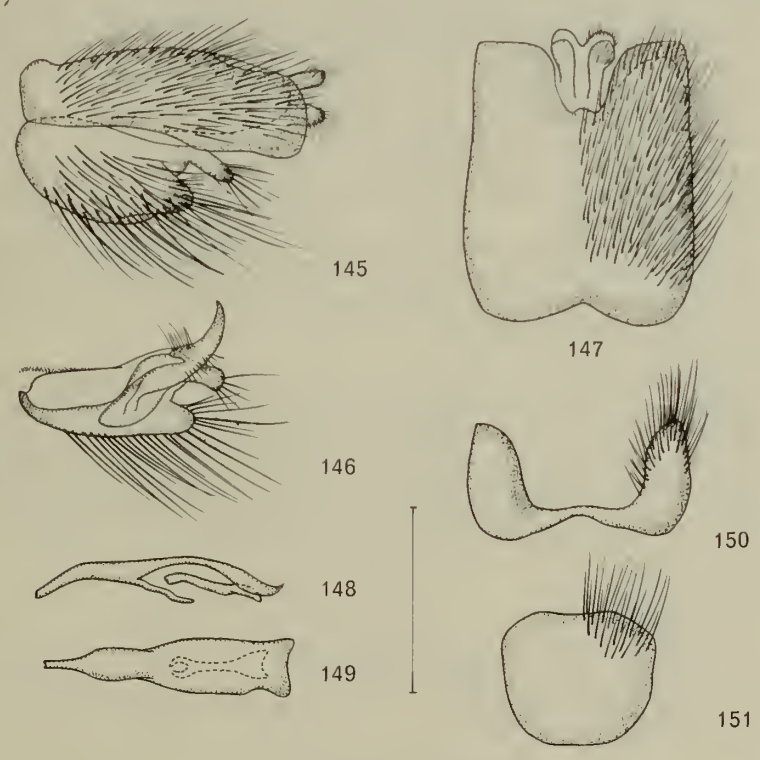
Thorax. Mesonotum more distinctly striped than in male.

Wings (Text-fig. 87). Distinctly longer and narrower than in male and in female of *fumipennis*, width of axillary cell approximately equaling width of anal cell. Colour dark brownish in apical part of wing only, and mostly in broad streaks along the veins, basal part greyish hyaline. Stigma, veins and halteres as in male.

Legs. As in male, but f_1 and f_2 may also have a few short *av* setae.

Abdomen. Segment 4 and the following segments distinctly compressed laterally. Tergite 1 brownish black on middle, whitish grey tomentose laterally. Tergites 2–3 predominantly shining blackish, but with distinct, continuous whitish grey tomentose posterior bands, occupying one-fourth to one-sixth of total tergal length. Tergite 4 entirely black. Tergites 5–6 mainly blackish, but with large, whitish grey tomentose oval spots laterally. Remainder of abdomen blackish. Pile short and mainly blackish, only whitish on tomentose areas of tergites 2–3. 6 + 6 terminal spines which are moderately long, narrow and pointed.

Total length 8·2–10·3 mm.



FIGS 145–151. Male terminalia of *Stenopomyia variegata*. 145, genitalia in lateral view; 146, right gonocoxite in intero-ventral view; 147, epandrium in dorsal view; 148, aedeagus in lateral view; 149, aedeagus in dorsal view; 150, tergite 8; 151, sternite 8. Scale: 0·5 mm.

Material examined.

Holotype ♀, Madagascar: Bigot Coll. (BMNH); the specimen is in good condition, but the right wing is broken and only the left p_1 is preserved.

Madagascar: Tam., Antanamba, 3 ♂, 3 ♀, 14.–15.ix.1957 (*Fred Keiser*) (NMB, ZMC); Tam., Manompana, 1 ♀, 12.xi.1957 (*Fred Keiser*) (NMB); 1 ♀, i 1954 (*J. Vadon*) (NMB); Fenerive, coastal forest, 1 ♂, 1 ♀, xii. 1955 (*B. Stuckenberg*) (NM).

Stenopomyia fumipennis sp. n.

(Text-fig. 84)

Diagnosis. ♂. Femora distinctly paler than tibiae, as in *variegata*, but not so brightly yellow as in this species. All coxae concolorous with pleura.

Description. ♂. *Head* (Text-fig. 84). Facial index 0·39. Practically as described for *variegata*, but with smaller dimensions. Blackish area on lower frons more polished than in *variegata* because of less tomentum. Upper part of occiput also more blackish and with fewer post-ocular and occipital setae, about 10 on each side. First antennal segment comparatively longer.

Thorax. Seen from above, mesonotum blackish with thin greyish tomentum, without any distinct pattern. Seen from behind, mesonotum black with two broadly separated bands of tomentum on anterior part. Mesonotal pile short and black. Scutellum coloured as mesonotum, with 4 strong *sc* setae. Pleura more whitish grey tomentose than in *variegata*, as the dull blackish areas are less extensive.

Wings. Cell M_3 narrowly open on one wing, closed at wing-margin on the other wing. Other characters as in *variegata*, including colour.

Legs. Femoral chaetotaxy as in *variegata*. Coxae whitish grey tomentose like the pleura. Femora yellowish to yellowish brown, F_3 being darkest. Tibiae and tarsi darker brownish, distinctly darker than femora.

Abdomen of practically the same colour as in *variegata*. No distinct differences were observed.

Terminalia. Epandrium and gonocoxites blackish brown with black pile, thus distinctly darker in colour than in *variegata*. The single specimen available was not dissected because of the difficult angle of the abdomen.

Total length 6·9 mm.

♀. *Head*. Facial index 0·43. Very similar to male, except for the broader frons.

Thorax. Mesonotum more blackish than in male; seen from behind without the very distinct tomentose stripes described above for the male.

Abdomen. Tergites mostly shining blackish, as in *variegata*. Tergites 2–3 with only posterolateral corners whitish grey tomentose, thus without continuously tomentose posterior bands as in this species. Tergite 4 entirely black, and tergites 5–6 with large oval spots of whitish grey tomentum. Sternites, pile and terminal spines as in *variegata*.

Total length about 8 mm.

Material examined.

Holotype ♂, Madagascar: Moheli, Fomboni (*A. R.*) (MP).

Paratypes. Madagascar: Moheli, Fomboni, 2 ♀ (*A. R.*) (MP & ZMC); Moheli, Kamgani, 1 ♀, vi. (*Pr. M.*) (MP).

Stenopomyia fuscata sp. n.

(Text-figs 85, 152–158)

Diagnosis. ♂ ♀. Femora distinctly darker in colour than the corresponding tibiae, as in

uncilobata. Frons comparatively broader than in this species and more shining blackish above. Anterior ocellus larger than in *uncilobata*. Epandrium with striking differences in shape in the two species.

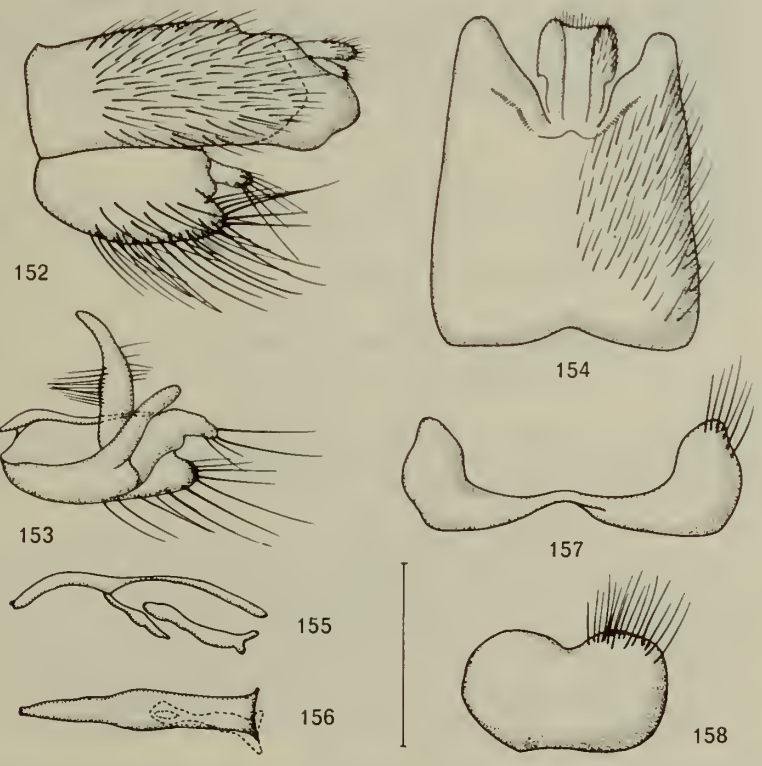
DESCRIPTION. ♂. *Head* (Text-fig. 85). Facial index 0·43. Frontal stripe slightly broader than in *uncilobata*. Proboscis reaching slightly beyond level of antennal bases. Labella and palpi blackish. Frons black, upper part subshining, middle part whitish grey tomentose and lower part shining with narrowly tomentose areas laterally along eye-margins. Face, genae and occiput with whitish grey tomentum. Upper part of occiput black, with about 16 post-ocular and occipital setae on each side. First and second antennal segments brownish black, thinly tomentose and with short black hairs. Third segment missing.

Thorax. Mesonotum blackish and subshining, i.e. with thin greyish tomentum. Scutellum coloured as mesonotum, with 4 *sc* setae of almost equal length. Pleura as in *variegata*.

Wings. Cell M_3 narrowly open. Vein R_4 with a curvature as in *variegata*. Colour greyish hyaline in basal part, brownish in apical part, the line of demarcation running over apical part of discal cell but not very sharp. Stigma of same colour as apical part of wing. Veins and halteres brownish black.

Legs. F_1 and f_2 with a few short *av* setae. F_3 with irregular rows of short *av* and *pv* setae in apical two-thirds or more. Colour dark brownish to blackish, tibiae and tarsi of p_1 and p_2 being palest.

Abdomen. In dorsal view tergites mostly whitish grey tomentose, but anterior parts of



FIGS 152–158. Male terminalia of *Stenopomyia fuscata*, holotype. 152, genitalia in lateral view; 153, right gonocoxite in intero-ventral view; 154, epandrium in dorsal view; 155, aedeagus in lateral view; 156, aedeagus in dorsal view; 157, tergite 8; 158, sternite 8. Scale: 0·5 mm.

tergites 2–3 and lateral parts of tergite 4 blackish. In lateral view these blackish areas are shining and cover anterior half of tergites 2–3 and entire lateral part of tergite 4. Distinct whitish yellow hind-marginal seams on tergites 2–4. Sternites mainly blackish and shining. Pile short and consisting of both black and pale hairs.

Terminalia (Text-figs 152–158). Epandrium and gonocoxites blackish and shining, with black pile. Epandrium as in Text-fig. 154. Gonocoxite (Text-fig. 152) with a moderately long projection ventrally. Distal end of dorsal gonocoxal process short and broad. Ventral lobe and stylus (Text-fig. 153) almost as in *variegata*. Aedeagus (Text-figs 155, 156) also practically as in *variegata*, but dorsal apodeme narrower, and phallic part narrowing more gradually. Tergite 8: Text-fig. 157. Sternite 8: Text-fig. 158.

Total length about 7·8 mm.

♀. *Head*. Facial index 0·46. Frons broader and mostly shining to subshining blackish, only narrowly tomentose along eye-margins. Frons with two depressed areas, one in front of anterior ocellus and one on middle of frons above the strongly projecting lower frons. These depressed areas wrinkled and therefore less shining. Other characters of head as in male. Third antennal segment in one of the paratypes blackish like the rest of antenna.

Thorax. Mesonotum apparently more shining black than in male.

Wings. Cell M_3 closed in one of the paratypes, narrowly open in the other. The paratype with closed cell M_3 has apical part of wing darkened as described for male. In the other paratype the wing is practically uniformly greyish hyaline.

Legs as in male.

Abdomen. Tergites mainly shining blackish. Tergites 1–3 with whitish grey tomentose lateral areas along posterior margins. Tergite 4 wholly black. Tergites 5–6 also with whitish grey tomentose areas, but not along posterior margins of tergites. Sternites blackish brown and shining. Pile short, black and sparse. 6 + 6 terminal spines which are moderately long, narrow and pointed.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Région du Sud-Est, Fort Dauphin, 1.ix.1901 (*Ch. Alluaud*) (MP).

Paratypes. 1 ♂, 2 ♀, same data as holotype.

Stenopomyia uncilobata sp. n.

(Text-figs 86, 159–165)

DIAGNOSIS. ♂. The dark coloured femora separate this species and *fuscata* from the other two species of the *variegata*-group. Frons narrower than in *fuscata*, not so shining, and anterior ocellus smaller. Epandrium differently shaped.

♀. Unknown.

DESCRIPTION. ♂. *Head* (Text-fig. 86). Facial index 0·47. Eyes narrowly separated, forming a comparatively narrow frontal stripe. Proboscis reaching to level of antennal bases. Labella broad and blackish. Palpi shorter than proboscis, blackish, with short pile of both pale and black hairs. Seen from in front, upper half of frons dull blackish; in dorsal view, whitish grey tomentose above and below, with the central area blackish. Central area of lower half of frons shining blackish. Lateral areas of lower half of frons, face, genae and lower part of occiput whitish grey tomentose. Upper part of occiput greyish black with about 18 post-ocular and occipital setae on each side. Antennae blackish, hardly tomentose, pile short and black.

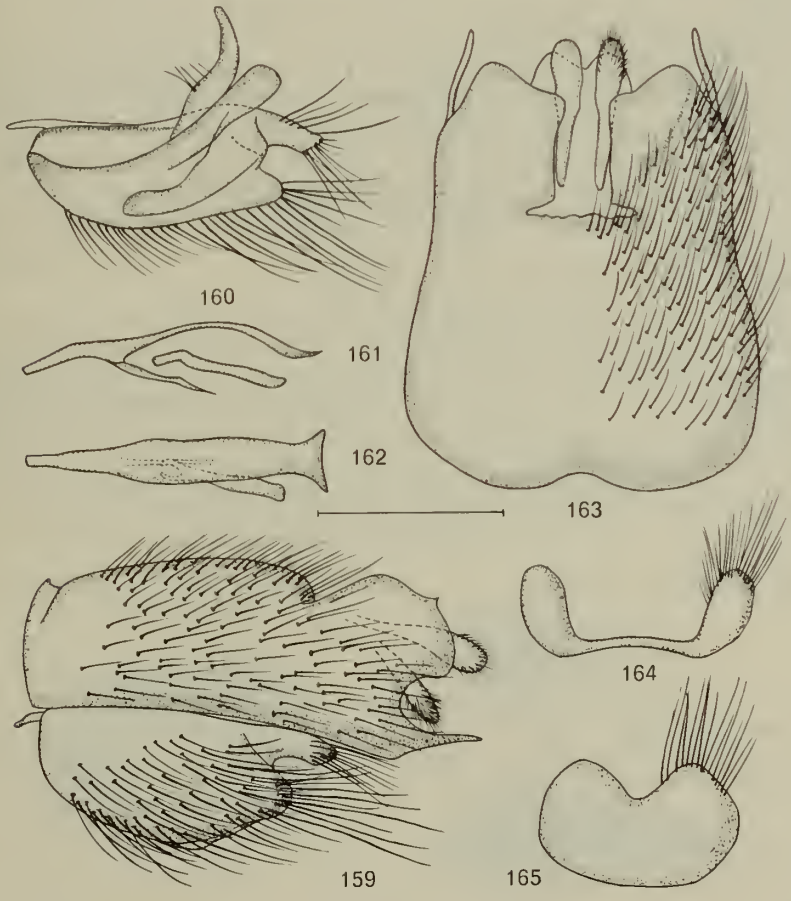
Thorax. Seen from in front, mesonotum blackish and subshining, i.e. with thin whitish grey tomentum. Seen from behind, mesonotum blackish with central area on anterior part whitish grey tomentose. Pile short and consisting of both black and whitish hairs. Scutellum black, thinly tomentose; 4 *sc* setae, the lateral pair nearly as long as the subapical pair. Seen

from above, pleura whitish grey tomentose with anterior part of sternopleuron and entire pteropleuron and hypopleuron blackish.

Wings. Cell M_3 closed. Vein R_4 with proximal section slightly curved, apical section with a deep curve. Colour dark brownish in apical half, more brownish grey in basal half, but without a sharp line of demarcation. Stigma, veins and halteres brownish black.

Legs. F_1 with 2–4 short *av* setae. F_2 with 1–2 short *av* setae. F_3 with 4–6 short *av* setae and a row of about 8–12 even shorter *pv* setae along almost entire length. Coxae coloured as pleura. F_1 dirty brownish in holotype, more blackish brown in paratype. F_2 and f_3 blackish brown with yellowish tips, particularly distinct in f_2. Femoral pile short, mainly scaly and whitish. Tibiae brownish to blackish, t_3 being darkest, especially in paratype. Tarsi coloured as the corresponding tibiae.

Abdomen. In dorsal view, all tergites thickly silvery whitish tomentose, only central area of tergite 1 dark brownish and anterior margins of tergites 2–3 and lateral parts of tergite 4 narrowly blackish. In lateral view, anterior half of lateral areas of tergites 2–3 and entire lateral areas of tergite 4 blackish and shining. Pile of lateral areas on tergites 1–3 whitish,



FIGS 159–165. Male terminalia of *Stenopomyia uncilobata*, holotype. 159, genitalia in lateral view; 160, right gonocoxite in intero-ventral view; 161, aedeagus in lateral view; 162, aedeagus in dorsal view; 163, epandrium in dorsal view; 164, tergite 8; 165, sternite 8. Scale: 0·5 mm.

on tergites 4–6 blackish. Dorsal areas of tergites with mixed blackish and whitish hairs. Sternites shining brownish black, with pile as on lateral areas of tergites. Distinct whitish hind-marginal seams on segments 2–5.

Terminalia (Text-figs 159–165). Epandrium and gonocoxites reddish brown to brownish black, with black pile. Epandrium as in Text-figs 159, 163; with posterior margin modified, forming a large, balloon-shaped lobe dorsally and long, pointed hook ventrally. Gonocoxite (Text-fig. 159) much shorter than epandrium, its posterior margin with a broadly rounded projection; dorsally with a short and broad distal end of dorsal gonocoxal process. Stylus in ventral view (Text-fig. 160) comparatively long and narrow, blunt-tipped. Ventral lobe comparatively long and broad. Phallus in lateral view (Text-fig. 161) rather thick and only slightly curved, in dorsal view (Text-fig. 162) only slightly narrowing towards tip. Dorsal apodeme in lateral view (Text-fig. 161) low and moderately curved, in dorsal view (Text-fig. 162) about twice as wide as base of phallus and with a constriction near distal end. Ventral apodeme short and very narrow, almost linear. Ejaculatory apodeme simple. Tergite 8: Text-fig. 164. Sternite 8: Text-fig. 165.

Total length 7·6 mm.

♀. Unknown.

Material examined.

Holotype ♂, Madagascar: Tam., Perinet, 6.x.1958 (*Fred Keiser*) (NMB).
Paratype. Madagascar: Tam., Perinet, 1 ♂, 4.x.1958 (*Fred Keiser*) (ZMC).

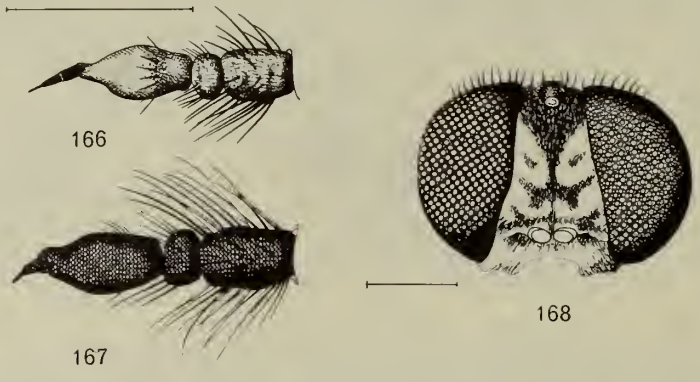
STENOSATHE gen. n.

Gender: feminine.

Type-species: *Thereva brachycera* Loew, 1857.

Description. *Head.* Male eyes completely touching for a long distance on frons. Upper facets enlarged and clearly demarcated from the smaller facets. Female frons moderately broad, entirely tomentose with brownish and greyish colours, but not forming any distinct pattern. Frons in both sexes usually with distinct hairs. Face bare and with margins moderately diverging below. Facial indices varying between 0·56 and 0·62, i.e. clearly higher than in *Stenopomyia*, but within the range of *Irwiniella*. Palpus one-segmented. Proboscis rather long and with large labella. First antennal segment shorter than third segment without style.

Thorax. Three notopleural, 1–2 supraalar and one postalar setae. Number of scutellar setae not constant; 2, 3 or 4 may be present, sometimes irregularly arranged. Prosternum



Figs 166–168. *Stenosathe.* 166, *S. brachycera*, ♂ antenna; 167, *S. pilosa*, antenna of ♂ holotype; 168, *S. brachycera*, ♀ head in frontal view. Scale: 0·5 mm.

haired on lateral parts or on whole surface. Sternopleuron almost bare in female, but with some hairs on upper part in male. Pleura uniformly coloured and sparsely haired.

Wings. Vein R_4 more or less strongly curved and cell M_3 broadly open. Ground-colour hyaline, greyish or brownish tinged.

Legs. Coxae coloured like the pleura and bare on posterior surface of cx_1 and cx_2. F_1 and f_2 without *av* setae, f_3 with a few short *av* setae. Tibial chaetotaxy as in *Stenopomyia*, but *pv* setae on t_3 always very short and few in number.

Abdomen in both sexes slender and only slightly tapering, with only slight sexual differences in pattern and shape. Abdominal pile short and sparse.

Male terminalia. Epandrium basically rectangular, but with a very deep V-shaped incision into posterior margin. Gonocoxite quite simple in shape, and distal end of dorsal gonocoxal process varying in length. Stylus and ventral lobe as usual in this group of genera. Aedeagus in lateral view with rather a strongly down-curved phallic part. Dorsal apodeme almost straight in lateral view, narrower than proximal part of phallic part in dorsal view and strongly tapering distally. Sternite 8 rather variable in shape.

Remarks. This genus is erected for two apparently closely related species occurring in Rhodesia and Natal. It may well be the sister-group of the genus *Stenopomyia* from Madagascar. The narrow, rod-shaped dorsal apodeme certainly represents an apomorphic character in comparison with *Stenopomyia*, whereas the simple epandrium is plesiomorphic compared with the varied and complicated shape of the epandrium in *Stenopomyia*. The genera *Stenosathe* and *Stenopomyia* may together be the sister-group of *Irwiniella*, and all three genera together with *Schoutedenomyia* form a group which would be called '*Psilocephala*' using a conservative terminology.

Key to Species of *STENOSATHE*

1 Prosternum haired on whole surface. Palpus with black pile. Third antennal segment mostly yellowish brown (Text-fig. 166) . . . ***brachycera*** (p. 247)
– Prosternum only haired laterally. Palpus with yellowish pile. Third antennal segment mostly blackish (Text-fig. 167) . . . . . ***pilosa*** (p. 249)

Stenosathe brachycera (Loew) comb. n.

(Text-figs 166, 168, 169–175)

Thereva brachycera Loew, 1857 : 342; Loew, 1861 : 54. LECTOTYPE ♂, 'Caffraria' [Natal] (NRS), here designated [examined].
Psilocephala brachycera (Loew) Kröber, 1912 : 125; Kröber, 1931 : 126.

Diagnosis. ♂♀. Prosternum haired on whole surface. Male frons bare, or more sparsely haired than in *pilosa*. Antennal segment 3 mainly yellowish brown.

Redescription. ♂. *Head* (Text-fig. 166). Facial index 0·56. Eyes touching for a distance equal to height of ocellar triangle. Proboscis reaching to level of middle of first antennal segment; labella blackish. Palpi nearly as long as proboscis, brownish and with long black pile. Frons bare or with a few short black hairs on middle. Frons seen from in front brownish grey tomentose, upper corner and areas lateral to antennal bases dull dark brownish. Face, genae and upper part of occiput brownish tomentose. Lower part of occiput whitish grey tomentose. About 15 post-ocular and occipital setae on each side. First and second antennal segments brownish black and slightly whitish tomentose. Third antennal segment yellowish brown, basal half more or less darkened, but not on the extreme narrow base of the segment. Style black. Pile on first segment rather long.

Thorax. Mesonotum brownish grey tomentose, only indistinctly striped. Mesonotal pile

long (about 0·30 mm) and consisting of erect, brownish hairs and more adpressed, yellowish hairs. Scutellum coloured as mesonotum, exclusively pale-haired, 2–4 *sc* setae of nearly equal size. Pleura with only thin greyish tomentum, leaving the pleura subshining in lateral view. Prosternum with hairs on whole surface.

Wings. Vein R_4 with only a slight curvature distally. Colour greyish brown, most intensely along costal margin. Stigma, veins and halteres brownish black.

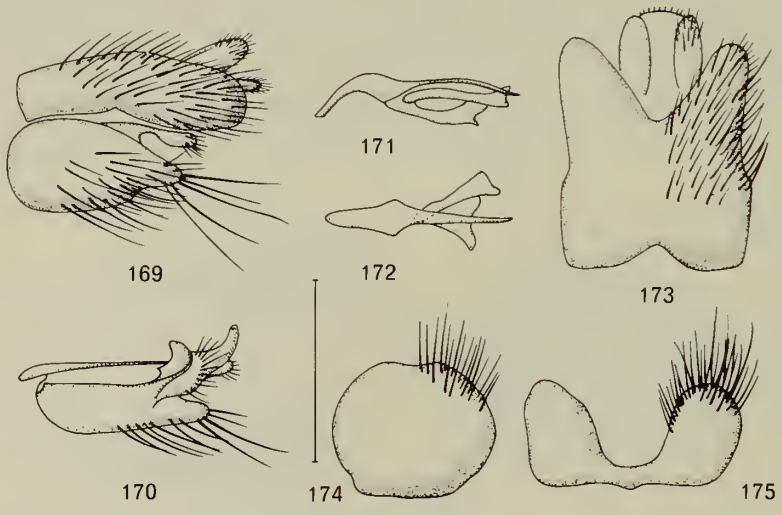
Legs. F_1 and f_2 without setae. F_3 with a few short *av* and *pv* setae distributed along apical half or more. Femora brownish black and distinctly shining, often slightly paler brownish apically. Tibiae and tarsi of p_1 and p_2 dirty yellowish brown, t_3 and its tarsus brownish black, like the femora.

Abdomen. All tergites brownish black and shining. Lateral areas of tergite 1 and anterior part of tergite 2 greyish tomentose. Posterior margins of tergites 2–3 also very narrowly tomentose, these tomentose margins widening laterally, so that posterior corners of the tergites are greyish tomentose. Tergites 2–5 also with pale hind-marginal seams. Sternites shining brownish black. Abdominal pile rather long and pale, only black on posterior sternites.

Terminalia (Text-figs 169–175). Epandrium and gonocoxites brownish black with blackish pile. Epandrium as in Text-fig. 173. Gonocoxite (Text-fig. 169) with a moderately long process posteriorly. Distal end of dorsal gonocoxal process short and very narrow proximally. Stylus and ventral lobe (Text-fig. 170) both short. Aedeagus in lateral view (Text-fig. 171) with phallic part gradually decreasing in width and rather strongly curved. In dorsal view (Text-fig. 172) the phallus is broad proximally and of gradually decreasing width, while the dorsal apodeme is very narrow and sharply pointed distally. Both ventral and ejaculatory apodemes have the distal part thickened. Tergite 8: Text-fig. 175. Sternite 8: Text-fig. 174.

Total length 6·4–8·1 mm.

♀. *Head* (Text-fig. 168). Facial index 0·60. Seen from in front, frons and face brownish grey tomentose with shifting spots of dull brownish black appearance. On the areas lateral to antennal bases the tomentum is more whitish grey. Entire frons with short, black hairs. Rest of head as in male, but proboscis may be slightly longer, often reaching to level of apex of first



FIGS 169–175. Male terminalia of *Stenosathe brachycera*. 169, genitalia in lateral view; 170, right gonocoxite in intero-ventral view; 171, aedeagus in lateral view; 172, aedeagus in dorsal view; 173, epandrium in dorsal view; 174, sternite 8; 175, tergite 8. Scale: 0·5 mm.

antennal segment. Third antennal segment usually paler than in male, i.e. not so intensely darkened in basal part. Antennal pile shorter.

Thorax. Mesonotum on disc with three dark brownish bands separated by two more greyish brown stripes. Anterior and lateral parts of mesonotum with a thin, pure greyish tomentum. Mesonotal pile much shorter than in male and adpressed. Rest as in male.

Wings and *legs* as in male.

Abdomen as in male, but tergites 4–5 also with thin whitish grey tomentum on posterior parts. Mesonotal pile short. 7 + 7 comparatively long and moderately pointed spines at tip of abdomen.

Total length 6·5–7·7 mm.

Remarks. Loew (1857 : 342) gave a short diagnosis of the male sex of this species based on material fron 'Caffraria' collected by J. Wahlberg. Four years later, Loew (1861 : 54) repeated the original short diagnosis and added a longer description in German. He then, erroneously, gave the sex as ♀. The syntypic series consists of three male specimens in the Stockholm Museum. One is labelled with two numbers only: '167' and '49'. This specimen is intact but slightly mouldy. The other two syntypes are labelled 'Caffraria', 'J. Wahlb.' and '167'. One of these has only the left p_3 preserved and the antennae are also missing, while the other has lost the head and abdomen, these parts being glued to a card on the pin. All specimens are certainly conspecific and agree well with the description. The first mentioned specimen is hereby designated as lectotype and has been labelled accordingly.

Distribution. The species seems to be restricted to the coastal plains of Zululand and the Natal province of South Africa.

Material examined.

Lectotype ♂ and 2 paralectotypes ♂, South Africa: Natal ('Caffraria') (*J. Wahlberg*) (NRS) (see remarks above).

South Africa: Natal, Durban, 1 ♂, ix. 1920 (*C. v. d. Merwe*) (SAM); same locality, 3 ♂, 2 ♀, viii. 1920 (*C. v. d. Merwe*) (SAM & BMNH); same locality, 2 ♂, 19.viii. & 6.ix.1906 (*G. F. Leigh*) (TM); same locality, 1 ♂, 5.iii.1944 (*Marley*) (SAM); Stella Bush, Durban, 1 ♂, 5.ix.1943 (*Marley*) (SAM); same locality, 1 ♀, Moor, 2 ♂, iv. 1916 (*Marley*) (SAM); Umhlanga Rocks, 2 ♂, 1 ♀, 6 & 9.v.1957 (*Schofield*) (NM & ZMC); Umkomaas, 1 ♀, 1.i.1935 (*L. Bevis*) (NM); Pinetown, 1 ♀, 6.iv.1910 (*G. F. Leigh*) (TM); Winklespruit, 1 ♀, 7–11.iv.1962 (*L. Vári*) (TM); Natal, Durban, Umbilo, 1 ♂, 8.xii.1914, 1 ♀, 27.ix.1916, 1 ♀, 7.x.1919, 1 ♂, 24.iv.1921, 1 ♀, 2.xii.1936 (*A. L. Bevis*) (DM); Natal, Durban, Bluff, 1 ♂, 12.xii.1936 (*L. Bevis*) (DM); Natal, Sūnwich Port, 1 ♂, x. 1951 (NM); Zululand, Mtunzini, 1 ♂, xii.1961 (*W. J. Lawson*) (DM); Zululand, Dukuduku between St. Lucia & Matubatuba, 2 ♂, 1 ♀, 7–8.iv.1960 (*B. & P. Stuckenberg*) (NM & ZMC).

Stenosathe pilosa sp. n.

(Text-figs 167, 176–182)

Diagnosis. ♂ ♀. Distinguished from *brachycera* by having hairs only on lateral parts of prosternum, the frontal pile stronger, and blackish third antennal segment.

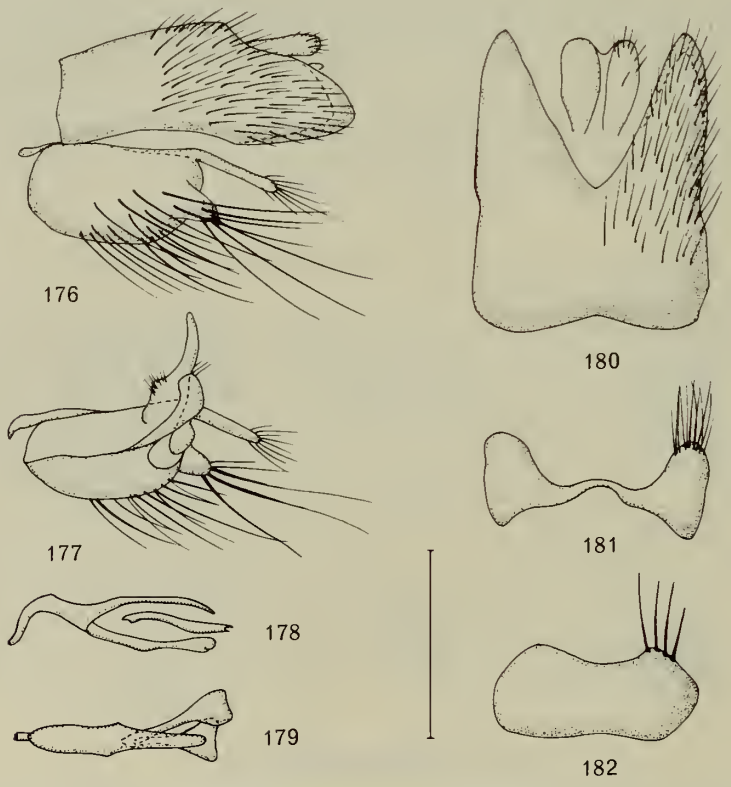
Description. ♂. *Head* (Text-fig. 167). Facial index 0·62. Eyes touching for a distance equal to height of ocellar triangle. Upper facets more enlarged than in *brachycera*. Proboscis reaching to level of antennal bases. Palpus yellowish brown and with long, black hairs. Frons with numerous long black hairs. Frons, face and genae brownish grey to dark brownish tomentose, darkest on frons. Occiput with pale brownish grey tomentum, not much darker on upper part than on lower part. Some long black, stiff hairs on genae and lower occiput. Post-ocular setae very long and thin, about 8–9 on each side; occipital setae numerous and hair-like. Antennae blackish, first and second segments slightly brownish grey tomentose; third segment slightly paler at extreme base. Pile on first antennal segment long.

Thorax. Mesonotum brownish grey to dark brownish tomentose, darker than in *brachycera*. Mesonotal pile long and blackish. Holotype with 2 *sa* setae on right side, one *sa* seta on left side. Scutellum brownish grey, with pale hairs and 3–4 strong *sc* setae of almost equal size. Pleura more pure greyish tomentose, but still with a brownish tinge.

Wings. Vein R_4 curved as in *brachycera*. Colour uniformly greyish brown. Stigma, veins and halteres brownish black.

Legs. F_1 and f_2 without *av* setae. F_3 with only a few very inconspicuous *pv* setae. Femora brownish black and shining with black pile. Tibiae dark brownish. Tarsi blackish.

Abdomen. Tergites mostly blackish and shining, tergites 2–5 with shining yellowish brown posterior corners and also a narrow yellowish brown stripe along posterior margin of the



Figs 176–182. Male terminalia of *Stenosathe pilosa*, holotype. 176, genitalia in lateral view; 177, right gonocoxite in intero-ventral view; 178, aedeagus in lateral view; 179, aedeagus in dorsal view; 180, epandrium in dorsal view; 181, tergite 8; 182, sternite 8. Scale: 0·5 mm.

tergites. The yellowish brown posterior corners with very indistinct pale tomentum. Tergite 1 more distinctly tomentose laterally. Sternites mostly yellowish brown and shining, but anterior parts of sternites 2–5 blackish. Pile short and black on disc of tergites, longer and paler on lateral parts of tergites and on sternites.

Terminalia (Text-figs 176–182). Epandrium and gonocoxites dark brownish and shining, with black pile. Epandrium as in Text-fig. 180. Gonocoxite (Text-fig. 176) with a moderately long process on posterior margin. Distal end of dorsal gonocoxal process very long and slender, projecting well beyond level of posterior margin of gonocoxite. Ventral lobe (Text-fig. 177) short and broad, but weakly sclerotized. Stylus with a long and pointed tip. Aedeagus practically as in *brachycera*, but phallic part more strongly curved and dorsal apodeme a little broader in dorsal view (Text-fig. 179). Tergite 8: Text-fig. 181. Sternite 8: Text-fig. 182.

Total length 7·1 mm.

♀. *Head.* Frons of practically the same width as in *brachycera* and with numerous short black hairs. Frons, face and genae brownish grey to dark brownish tomentose, frons without distinct pattern. Rest as in male, but base of third antennal segment paler brownish than in male, and basal segments more distinctly greyish tomentose.

Thorax. Mesonotum with three dark brownish bands separated by brownish grey stripes. Anterior and lateral parts also paler greyish tomentose. Both female paratypes with only one *sa* seta on each side. Scutellum and pleura (and also parts of mesonotum) appearing much paler than in male, because the ground-colour is pale brownish and partly translucent.

Wings as in male, but cell M_3 more broadly open.

Legs with chaetotaxy of femora as in male. Femora yellowish brown, about the same colour as tibiae, and tarsi also paler than in male. Coxae partly yellowish brown translucent.

Abdomen. Tergites almost wholly shining, only small lateral areas of tomentum on tergite 1. Ground-colour of tergites brownish to brownish black, darkest on anterior parts of first tergites, but not forming any distinct pattern. Pile short and mainly pale. Only 4 + 4 terminal spines which are short, broad and rather blunt-tipped.

Total length 7·0 mm.

MATERIAL EXAMINED.

Holotype ♂, RHODESIA: N. Vumba, 24.viii.1965 (*D. Cookson*) (NM).

Paratypes. Same locality as holotype, 2 ♀, 28.vi.1965 & 15.vii.1965 (*D. Cookson*) (NM & ZMC).

IRWINIELLA gen. n.

Gender: feminine.

Type-species: *Thereva Nuba* Wiedemann, 1828.

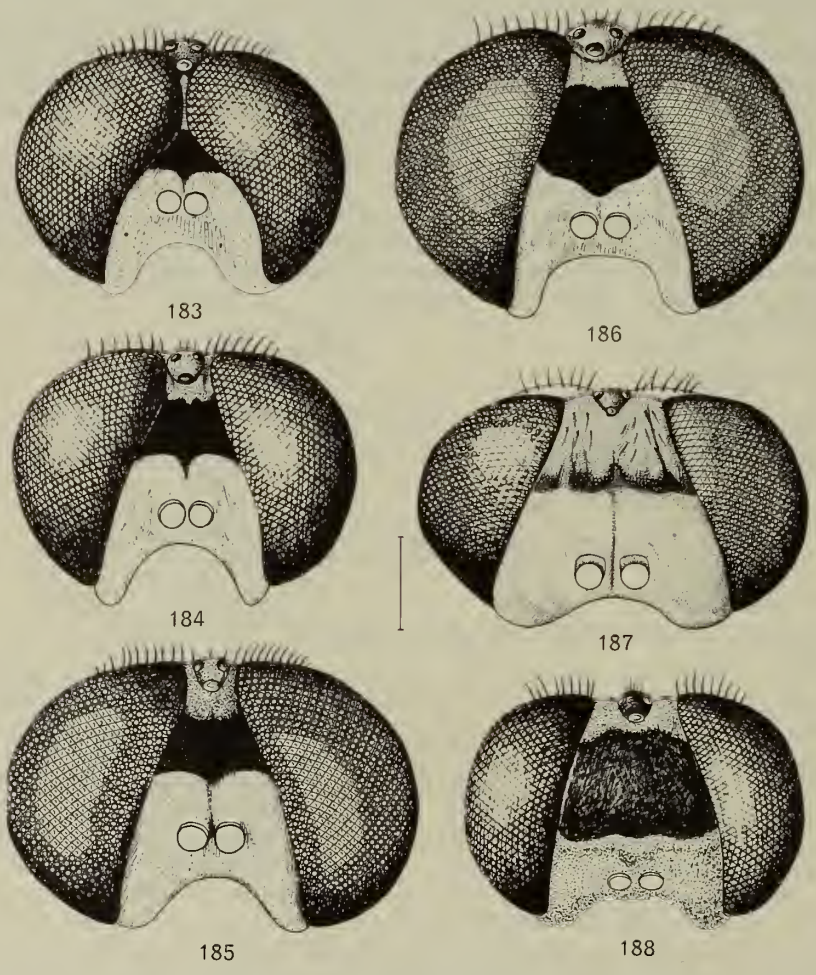
DESCRIPTION. *Head* (Text-figs 183–188). Face rather narrow compared with height of head. Facial margins diverging rather slightly from level of antennae down to level of bottom of eyes. Facial indices varying between 0·50 and 0·87, i.e., distance between lower corner of eyes in males 50–80 per cent of height of head, in females 56–87 per cent of height of head. Eyes in male (Text-fig. 183) practically touching for a shorter or longer distance, and separated by less than width of anterior ocellus. In females (Text-figs 184–188) the eyes are separated by a frontal stripe of rather variable width. The frontal stripe often has an area of dark tomentum on upper part, but shining calli never occur. The extreme upper part of male frons in most species is coloured in a similar way, but in varying degrees. Genae either narrow, ridge-shaped and bare, or broader, more evenly curved, and then often with short black or white pile. Frons usually with hairs, but bare in males of some species. Face bare, only haired in *semiargentea*. The number of post-ocular and occipital setae varies strongly between species. Antennae (Text-figs 189–203) always simple and inserted high on the head. There are distinct interspecific differences in length and width of the various antennal segments, and in the length

of pile on the first segment (see figures). Style comparatively long, two-segmented, ratio of the two sections variable; with an apical spine. Palpi one-segmented, narrow and of equal width throughout. Eye-facets of equal size; upper facets slightly enlarged in the males of some species, but never with a sharp line of demarcation between larger and smaller facets.

Thorax. Mesonotum with 3 notopleural, 1–2 supraalar and 1 postalar setae. 0–2 pairs of dorsocentral setae. Scutellum always with 4 strong setae. Prosternum with long hairs on entire surface. Sternopleuron with long hairs on most of its surface, even on the ventral and anterior parts.

Wings. Cell M_3 open or closed. Cell R_4 rather wide towards apex, at most 2·2 times as long as wide between tips of veins R_4 and R_5.

Legs. Cx_1 and cx_2 with long hairs on anterior and posterior surfaces. All femora usually have anteroventral setae, but these may be absent on f_1 and f_2. T_1 with anterodorsal, posterodorsal and posteroventral setae, and t_2 and t_3 with rows of setae in all four positions, i.e. anteroventral setae also present. All tibial setae comparatively long, usually as long as or longer than tibial diameter.



Figs 183–188. *Irwiniella*, heads in frontal view. 183, *I. nuba*, ♂; 184, *I. nuba*, ♀; 185, *I. tomentosa*, ♀; 186, *I. velutina*, ♀; 187, *I. natalensis*, ♀; 188, *I. pallida*, ♀. Scale: 0·5 mm.

Abdomen. In the male sex this is often entirely whitish grey tomentose, rarely with black anterior bands on the first tergites. In the females of most species tergites 2–3 have large, blackish triangular bands with their bases on the anterior margins, while tergites 5–6 have smaller, dark triangular bands with their bases on the posterior margins, and tergite 4 is almost entirely blackish, at most slightly tomentose laterally.

Male terminalia. Epandrium comparatively long, though always broader than long along mid-line. Paraproct in some species continuing into a narrow sclerotization of the intersegmental membrane; in other species without any such sclerotization. Dorsal gonocoxal process with a long free end which overhangs posterior margin of gonocoxite. Stylus also large. The ventral lobe is shaped as a simple, longer or shorter, narrow excrescence from the ventral margin of the gonocoxite. Hypandrium present only as a very narrow bar between the ventral bases of the gonocoxites. Aedeagus simple, with a rather short and more or less strongly curved phallus. Dorsal apodeme comparatively large, in lateral view almost straight, in dorsal view of rather variable shape but usually broad and sometimes tending to have lateral offshoots. Ejaculatory apodeme short and simple. Tergite 8 more or less strongly constricted medially. Sternite 8 either simple or with a more or less deep incision on posterior margin.

Remarks. The genus *Irwiniella* is named in honour of Dr M. E. Irwin, Pietermaritzburg, South Africa, who has made extensive collections and observations on Therevidae.

The genus is represented by fifteen species in the Ethiopian Region, but more species will certainly be discovered by further collecting. The genus seems to be distributed in all parts of the continental part of the region, and occurs also on the Cape Verde Is., Socotra, Madagascar, and Rodrigues I. east of Mauritius. This distribution pattern indicates that the genus is of considerable age or has extraordinary powers of dispersal, or both. Unfortunately, it has not been possible to establish the sister-group relationships of the Ethiopian members of the genus. The numerous characters available form, as is so often the case, a very complicated pattern of apomorphic and plesiomorphic conditions which it has not been possible to arrange into any scheme for the establishment of sister-groups. This can probably only be done when the numerous species of the genus occurring in the Indo-Oriental region have been worked out in a satisfactory way, or when other hitherto unused characters of the adults or of the immature stages are taken into consideration.

However, a few comments may be of interest for future study. The two species *maritima* and *bezzii*, which occur on the isolated Rodrigues I., undoubtedly form a monophyletic group, i.e., they have derived from a common ancestor. Several synapomorphic characters suggest this: sternite 8 narrow and with a deep incision on posterior margin; stylus with a distinct projection on middle; phallus almost straight in lateral view; dorsal apodeme broadly oval. The female probably of both species (only the female of *maritima* is known) has an abdominal pattern which may be called plesiomorphic, namely with dark bands or triangular spots with their bases on the *anterior* margins of *all* tergites. If this holds good, the female abdominal pattern of the other Ethiopian species may be termed apomorphic. In these species the pattern consists of dark bands on the anterior margins of tergites 2–3 and of smaller, triangular dark areas on the *posterior* margins of tergites 5–7, while tergite 4 is almost entirely dark.

Three species, *velutina*, *flavicornis* and *oldroydi*, are restricted to Madagascar and certainly form a monophyletic group, although it is not possible to state any synapomorphic characters for the group. However, it seems clear that the Malagasian species-group is more closely related to the species of continental Africa than to the species-group on Rodrigues I.

On the Cape Verde Is. there is also a species-group which is undoubtedly of monophyletic origin. It consists of *semiargentea* and *lindbergi*, the former being endemic to São Tiago and Antão, and the latter to Boa Vista. It is interesting to note that in these closely related species there is a striking difference in frontal and facial pile, a character often used by older authors to separate '*Psilocephala*' and '*Thereva*'. *I. semiargentea* has hairs on frons and upper face, whereas these parts are totally bare in *lindbergi*.

Most species of this genus are restricted to coastal dune localities, but several species (*nuba*, *tomentosa* and others) also occur at inland localities far from the sea. Further details will certainly appear in the future thanks to the intensive fieldwork being carried out by Dr. M. E. Irwin of Pietermaritzburg.

It is of interest to note that a female of *nuba* (Wiedemann) collected at Sherdi, Sudan, was stated to be predatory on cotton aphids. Very few observations have been published on the feeding activity of adult Therevidae, but predatory behaviour by *nuba* seems most improbable. The specimen in question was certainly only feeding on the aphid excretions (see also Irwin, in press).

Relationships. For the moment it seems best to arrange *Irwiniella* between the two more plesiomorphic genera *Stenopomyia* and *Stenosathe* described above and the more apomorphic genera treated later in the paper. The following characters, which were listed as plesiomorphic for *Stenopomyia* (see p. 222), are present in their apomorphic state in *Irwiniella*: head flattening more pronounced, but moderate; facial indices between 0·50 and 0·87, i.e. facial width between lower corner of eyes 50–87 per cent of head height; prosternum haired on entire surface; sternopleuron haired; cx_1 and cx_2 haired on posterior surface; dorsocentrals often present; and cell R_4 comparatively shorter and wider towards apex. On the other hand, the shape of the epandrium of *Irwiniella* certainly represents a more plesiomorphic state than in *Stenopomyia* and the same may be true of the broader aedeagus. Its relationship with the small genus *Stenosathe* is discussed on p. 247.

The relationships between *Irwiniella* and the more advanced genera, *Neophycus*, *Neothereva*, *Pseudothereva*, *Thereva* and *Caenophthalmus*, can be outlined as follows: *Neophycus*, *Neothereva* and *Pseudothereva* are clear derivates from *Irwiniella*, both genera being characterized by a few characters which are apomorphic by comparison with the conditions in *Irwiniella* (see further p. 289 and p. 296).

Its relationship with *Thereva* is less clear, because the *Thereva* of the Ethiopian region form a polyphyletic group with at least four monophyletic species-groups. Some of these may in fact be more closely related to *Irwiniella* than to some of the other species-groups of *Thereva*. The species assigned to the genus *Thereva* are united by further anagenetic progress in head-depression (see also p. 305), giving rise to head indices usually over 1·00, and by the consequent presence of pile on the face.

Key to Species of *IRWINIELLA*

Males

1 Lateral margin of tergite 4 with long blackish pile that contrasts strongly with the lateral whitish pile of the other tergites which is strikingly long and tufted on tergites 5–7. Tergites 2–3 with very distinct, shining blackish, anterior bands that occupy about half of total tergal length along mid-line. Antennae long and slender (Text-fig. 191). Mesonotum with a broad, brownish black median band. (C., E. and S. Africa) . . . . . ***tomentosa*** (p. 263)

– Lateral margin of tergite 4 with whitish pile as on lateral margins of the other tergites. All tergites usually entirely tomentose, or at most with narrow, brownish black anterior bands which do not occupy more than one-fourth of total tergal length along mid-line 2

2 All femora bicoloured, apical third to half yellowish brown, but without a sharp line of demarcation. Wings extensively brownish coloured. Antennae (Text-fig. 194) yellowish brown. Mesonotum with a broad, brownish median band. *Dc* setae absent. (Congo) . . . . . ***chapini*** (p. 270)

– Femora not bicoloured, blackish, brownish black or yellowish brown from base to apex, or dark with extreme apex yellowish brown, sometimes dulled with whitish or greyish tomentum 3

3 Femora yellowish brown to brownish, at most slightly darkened at tip of f_1. Femora not distinctly tomentose 4

– Femora blackish to brownish black, at most slighly yellowish brown apically, often dulled by greyish tomentum 7

4 *Dc* setae present . . . . . ***pallida*** (p. 272)

– *Dc* setae absent 5

5 Wings whitish tinged, with dark infuscations along veins. Facial indices ca 0·70. Smaller species: 6·0–6·6 mm. (South Africa) . . . . . ***pallipes*** (p. 258)

– Wings uniformly brownish grey tinged. Facial indices 0·50–0·55. Larger species: 8·8–10·0 mm. (Madagascar) 6

6 Humeri, postalar calli, scutellum and abdomen yellowish brown translucent ***flavicornis*** (p. 279)

– Humeri, postalar calli and scutellum greyish tomentose like the rest of thorax, and abdomen also entirely covered with tomentum . . . ***oldroydi*** (p. 280)

7 Frons bare 8

– Frons with lateral groups of black hairs 11

8 *Dc* setae absent. Genae narrowly ridge-shaped and bare. Frons black on upper two-thirds. (Madagascar) . . . . . ***velutina*** (p. 276)

– *Dc* setae present. Genae wider, more evenly curved and haired at least posteriorly. Frons darkened only at extreme apex 9

9 Third antennal segment (without style) longer than first segment (Text-figs 192, 196); its apical part very narrow 10

– Third antennal segment (Text-fig. 203) shorter than first segment; its apical part very short. Mesonotum with indistinct brownish and brownish grey stripes. (Cape Verde Is.) . . . . . ***lindbergi*** (p. 287)

10 Third antennal segment (Text-fig. 192) with the narrow apical part about half as broad as basal part. Mesonotum greyish with one broad median band. (Socotra) ***albohirta*** (p. 267)

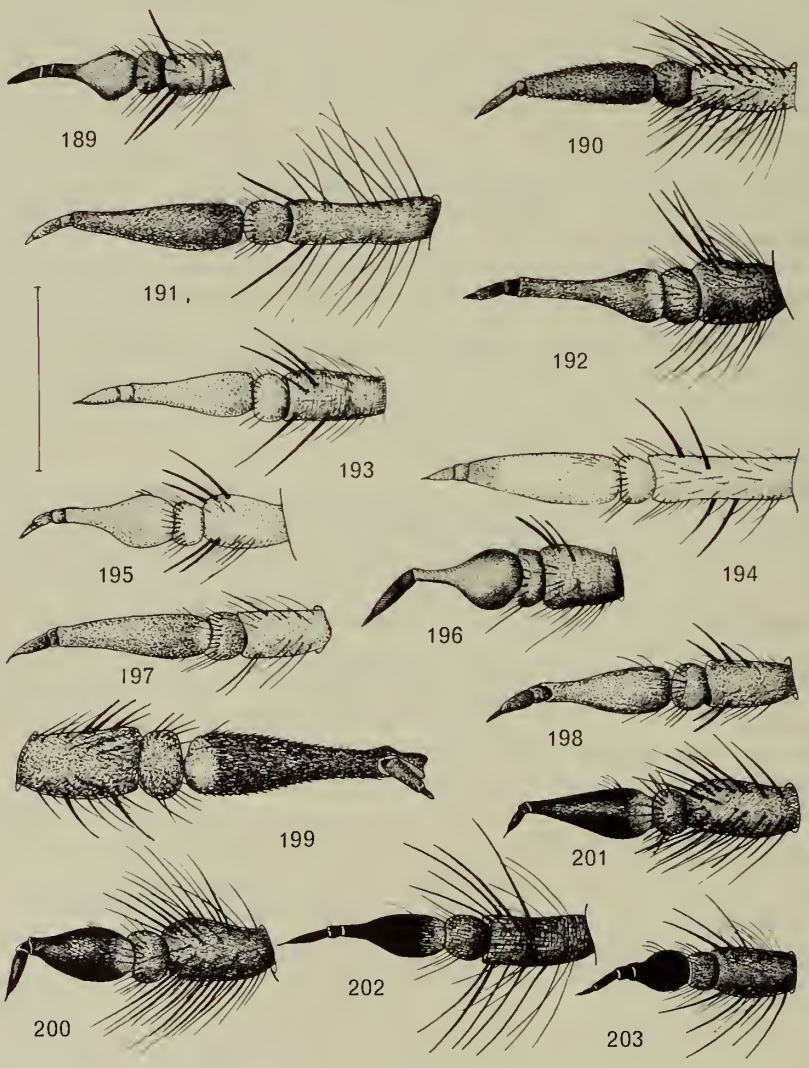
– Third antennal segment (Text-fig. 196) with the narrow apical part about one-sixth as broad as basal part. Mesonotum grey with three distinct brownish bands. (Natal) . . . . . ***natalensis*** (p. 274)

11 About 10–14 post-ocular + occipital setae on each side. Third antennal segment (Text-figs 190, 193) comparatively slender, and tapering gradually 12

– More than 25 post-ocular + occipital setae on each side. Third antennal segment (Text-figs 200, 201, 202) comparatively broad, and tapering more rapidly . . 13

12 *Dc* setae present. Pile on first antennal segment (Text-fig. 190) comparatively long. (NE. Africa) . . . . . ***nuba*** (p. 260)

– *Dc* setae absent. Pile on first anntenal segment (Text-fig. 193) comparatively short. (Aden) . . . . . ***arabica*** (p. 269)



FIGS 189–203. *Irwiniella*, antennae. 189, *I. pallipes*, ♂; 190, *I. nuba*, ♂; 191, *I. tomentosa*, ♂ holotype; 192, *I. albohirta*, ♂ paralectotype; 193, *I. arabica*, ♂ holotype; 194, *I. chapini*, ♂ lectotype; 195, *I. pallida*, ♂ holotype; 196, *I. natalensis*, ♂; 197, *I. velutina*, ♂; 198, *I. flavicornis*, ♂ holotype; 199, *I. oldroydi*, ♀ paratype; 200, *I. maritima*, ♂ lectotype; 201, *I. bezzii*, ♂ holotype; 202, *I. semiargentea*, ♂; 203, *I. lindbergi*, ♂ holotype. Scale: 0·5 mm.

13 Genae wide and with long whitish pile. Palpi with entirely whitish pile. (Rodrigues I.) . . . . . ***maritima*** (p. 282)
– Genae with stiff black pile. Palpi at least partly with blackish pile 14
14 Frontal pile not reaching below level of antennal bases. Style about one-third as long as third antennal segment (Text-fig. 201). Ground colour of mesonotum pale greyish. Tergites 2–4 thickly tomentose all over. (Rodrigues I.) ***bezzii*** (p. 284)
– Frontal pile reaching slightly below level of antennal bases. Style more than half as long as third antennal segment (Text-fig. 202). Ground colour of mesonotum brownish. Anterior corners of tergites 2–4 narrowly brownish black. (Cape Verde Is.) . . . . . ***semiargentea*** (p. 285)

Females

(The females of *albohirta, arabica, flavicornis* and *bezzii* are unknown.)

1 Frons with a blackish or brownish tomentose transverse area on upper part, which is clearly demarcated anteriorly from the pale tomentose lower part of frons (Text-figs 184–188) 2
– Frons nearly uniformly tomentose, at most with small and indistinctly demarcated areas of darker tomentum at eye-margins or along mid-line 9
2 Femora unicolorous yellowish to yellowish brown 3
– Femora unicolorous blackish to blackish brown or bicoloured 5
3 Frons comparatively narrow (as in Text-fig. 186). Anterior tergites blackish with posterior corners yellowish brown and without tomentum. (Madagascar) ***oldroydi*** (p. 280)
– Frons comparatively broad (Text-figs 187, 188). Tergites either almost uniformly brownish grey or with dull brownish areas on anterior tergites 4
4 Frons as in Text-fig. 188: the brownish frontal area only narrowly separated from antennal bases. Tergites uniformly brownish grey. Ground colour of wing brownish . . . . . ***pallida*** (p. 272)
– Frons as in Text-fig. 187; the dark frontal area pale brownish, narrowly brownish black anteriorly, and broadly separated from antennal bases. Anterior tergites greyish brown laterally, posteriorly and along mid-line; the rest dull brownish. Ground-colour of wing whitish hyaline . . . . . ***natalensis*** (p. 274)
5 Tergites 2–6 with blackish anterior bands and broadly greyish tomentose laterally and along posterior margins. In frontal view upper two-thirds of frons appearing dull blackish brown, lower third silvery greyish tomentose; in dorsal view entire frons appearing almost uniformly cinnamon-brown tomentose (Rodrigues I.) ***maritima*** (p. 282)
– Tergite 4 at most only greyish tomentose laterally, never along posterior margin, and often entirely shining black; tergites 5–6 not greyish tomentose at middle of posterior margins 6
6 Anterior margin of dark frontal area rather narrowly separated from antennal bases (Text-fig. 186). *Dc* setae absent 7
– Anterior margin of dark frontal area more broadly separated from antennal bases (Text-figs 184, 185). *Dc* setae present 8
7 Femora bicoloured. Tergites 4 and 7 not greyish tomentose laterally, i.e., entirely shining blackish. (Congo) . . . . . ***chapini*** (p. 270)
– Femora unicolorous blackish grey. Tergites 4 and 7 very conspicuously greyish tomentose laterally. (Madagascar) . . . . . ***velutina*** (p. 276)
8 First and third antennal segments long and slender (Text-fig. 192). Larger species: 9·9–11·6 mm. (C., E. and S. Africa) . . . . . ***tomentosa*** (p. 263)
– First and third antennal segments shorter (Text-fig. 191). Smaller species: 7·7–9·1 mm. (NE. Africa) . . . . . ***nuba*** (p. 260)

9 *Dc* setae present; 2 *sa* setae present. Femora brownish black. Palpus blackish haired . . . . . ***semiargentea*** (p. 285) and ***lindbergi*** (p. 287)
– *Dc* setae absent; 1 *sa* seta present. Femora yellowish brown. Palpus whitish haired . . . . . ***pallipes*** (p. 258)

Irwiniella pallipes (Kröber) comb. n.

(Text-figs 189, 204–210)

Psilocephala pallipes Kröber, 1912 : 117; Kröber, 1931 : 124. Syntypes ♂ ♀, South Africa: Cape Prov., Algoa Bay [lost].

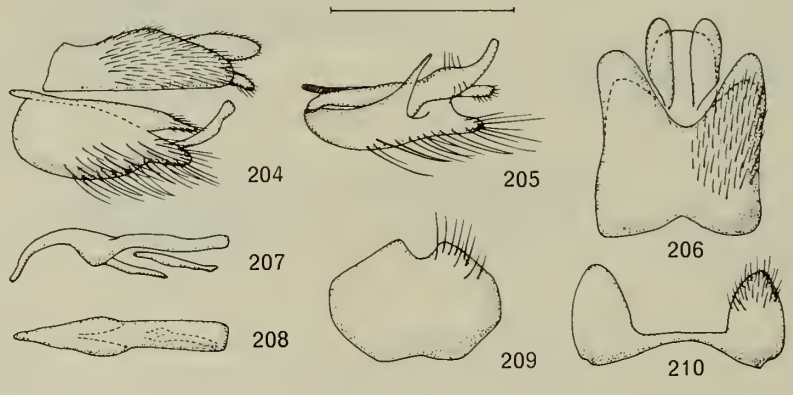
Diagnosis. ♂. Frons with hairs. First antennal segment short and with short pile. Genae with short pile. About 2 × 8 setae on occiput. Mesonotum brownish grey, not distinctly banded; *dc* setae absent. Femora yellowish brown.

♀. Frons nearly uniformly tomentose, brownish grey along mid line, pure greyish laterally, not forming a distinctly transversely arranged pattern. Genae deep and brown. *Dc* setae absent; only 1 *sa* setae present. Tergite 5 uniformly greyish tomentose.

Redescription. ♂. *Head* (Text-fig. 189). Facial index 0·70. Eyes separated for a distance equal to half width of anterior ocellus. Proboscis reaching to level of antennal bases. Palpi blackish brown with long whitish pile. Frons, face and occiput with thick whitish grey tomentum which has a slight brownish tinge on occiput. Frons with some very short hairs. Genae rather deep, mat blackish brown and with short black pile. Lower occiput with very long, whitish pile. On upper part of occiput only about 8 post-ocular and occipital setae on each side. First antennal segment dark with greyish tomentum and sparse and rather short pile. Second and third antennal segments brownish; style blackish. Third segment remarkably narrow apically. The two sections forming the style equally long.

Thorax. Mesonotum greyish and greyish brown tomentose, with very indistinct stripes and bands. Mesonotal pile rather long and pale. Pleura greyish tomentose with whitish pile on upper half of sternopleuron, on mesopleuron and metapleural callosity. Only 1 *sa* seta.

Wings. Cell M_3 open. Vein R_4 strongly curved. Ground colour whitish hyaline. Stigma and veins on basal and anterior parts of wing very pale brownish, on rest of wing blackish; veins closing second basal cell and also cross-veins slightly infuscate. Knob of halteres dirty yellowish brown.



Figs 204–210. Male terminalia of *Irwiniella pallipes*. 204, genitalia in lateral view; 205, right gonocoxite in intero-ventral view; 206, epandrium in dorsal view; 207, aedeagus in lateral view; 208, aedeagus in dorsal view; 209, sternite 8; 210, tergite 8. Scale: 0·5 mm.

Legs. F_1 and f_2 without *av* setae. F_3 without or with 1–3 short *av* setae at apex. T_1 with 2–3 very strong, *ad*, *pd* and *pv* setae. Coxae greyish tomentose as pleura. Femora and tibiae yellowish brown, femora more or less distinctly darkened, and tibiae with darkened apices. Tarsi blackish except for most of metatarsi.

Abdomen. Ground-colour yellowish brown, distinctly translucent when seen from behind. Tergites with thin greyish tomentum and long adpressed white hairs. Sternites more brownish tomentose, especially on median parts.

Terminalia (Text-figs 204–210). Colour yellowish brown, only indistinctly tomentose, pile whitish. Epandrium as in Text-fig. 206. Stylus shaped as shown in Text-fig. 205. Ventral lobe short and pointed. Aedeagus with the phallic part (Text-fig. 207) comparatively long and gradually curved; seen dorsally (Text-fig. 208) of gradually decreasing width from base to tip. Dorsal apodeme in dorsal view (Text-fig. 208) narrow, and ventral apodeme short. Tergite 8: Text-fig. 210. Sternite 8: Text-fig. 209.

Total length 6·0–6·6 mm.

♀. *Head*. Facial index 0·79. Frons with a depressed, transverse area over middle entirely covered with pale greyish tomentum which has a slightly brownish tinge in a broad median band. Frontal pile short, sparse and composed of both blackish and yellowish hairs. Rest of head whitish grey tomentose except for the wide genae which are brownish black tomentose. Rest as in male, but third antennal segment appearing darker than in male.

Thorax. Mesonotum more distinctly striped than in male, i.e. with three broad brownish grey longitudinal bands which are separated by more pure greyish tomentose stripes. Rest of thorax including the chaetotaxy as in male.

Wings. These appear much darker than in male, as cross-veins are more broadly infuscate; also the longitudinal veins are surrounded by infuscate streaks. Otherwise as in male.

Legs as in male, but femora appearing slightly darker than tibiae.

Abdomen. Tergites 2–4 with broad and rather dull, dark brownish anterior bands, while posterior parts are pale greyish tomentose. The dark bands occupy less than one fourth of tergal length. Tergites 5–6 nearly totally pale greyish, tergite 6 with a dark brownish band on middle. Tergite 7 mostly dark brownish, only slightly tomentose laterally. Pile sparse and pale. 6 + 6 terminal spines which are rather broad and bluntly tipped.

Total length 6.8 mm.

Remarks. Kröber described both sexes of *pallipes* on the basis of material from 'Algoa Bai' on the eastern coast of the Cape Province. The male syntype was stated to be in the Hamburg Museum, the female syntype in Kröber's own collection. Both may now be regarded as lost. If the female syntype was conspecific with the one of which he later (Kröber, 1931 : 124, fig. 12) figured the antenna, it is not conspecific with the male. Some of the specimens listed below come from the type-locality of *pallipes* and there can be no doubt about their identity.

Distribution. The species seems restricted to the coastal plain of the eastern Cape Province.

Material examined.

South Africa: Cape Prov., Willowmore, 1 ♂, 1 ♀ (*Dr Brauns*) (TM); Port Elisabeth, Zwartkops River, coastal dunes, 4 ♂, 1 ♀, 29.x.1964 (*B. & P. Stuckenberg*) (NM & ZMC); Sand Flats, 1 ♀, 25.iii.1953 (*E. McC. Callan*) (NM); Port Alfred, 1 ♀, 24.iii.1957 (*E. McC. Callan*) (NM); East London, coastal dunes, 5 m, 9 ♂, 16.iii. 1972 (*M. E. & B. J. Irwin*) (MEI & ZMC); Paterson, sand dunes, 300 m, 89 ♂, 14 ♀, 15.iii.1972 (*M. E. & B. J. Irwin*) (MEI & ZMC).

Irwiniella nuba (Wiedemann) **comb. n.**

(Text-figs 183, 184, 190, 211–219)

Thereva Nuba Wiedemann, 1828 : 559; Kröber, 1912 : 116; Kröber, 1925 : 15. Holotype ♂, 'Nubien' (SMF) [examined].

Psilocephala nigrifrons Becker, 1902 : 34. Holotype ♂, Egypt (ZMB) [examined]. [Synonymized by Kröber, 1912 : 116.]

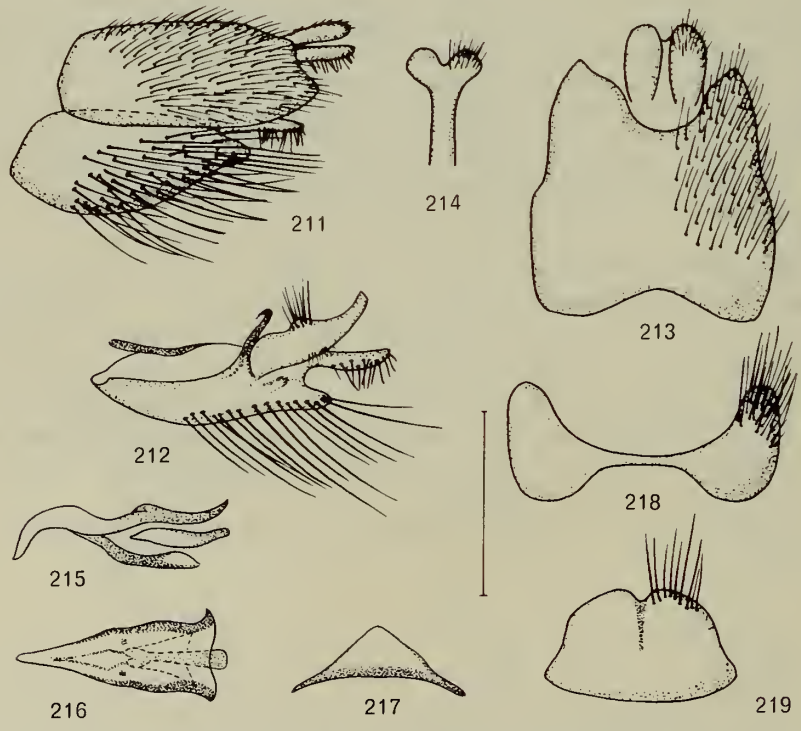
Psilocephala taeniata Becker, 1923 : 62; Kröber, 1931 : 125; Kröber, 1933 : 296. LECTOTYPE ♀, Sudan (NMW), here designated [examined]. **Syn. n.**

Psilocephala sudanica Kröber, 1933 : 294. Holotype ♀, Sudan (BMNH) [examined]. **Syn. n.**

Diagnosis. ♂. Frons with hairs. First antennal segment with comparatively long pile, first and second segments narrow (Text-fig. 190). Genae bare. About 2 × 14 setae on occiput. Mesonotum with three brownish bands; *dc* setae present. Femora unicolorous. All tergites whitish grey tomentose and with whitish pile.

♀. Anterior margin of dark frontal area (Text-fig. 184) broadly separated from antennal bases. Tergite 4 blackish, at most only greyish tomentose laterally. Tergites 5–6 greyish with dark triangles on posterior margins. Smaller species: 7–9 mm.

Redescription. ♂. *Head* (Text-figs 183, 190). Facial index 0.63. Eyes practically touching for a short distance. Proboscis reaching to level of middle of first antennal segment.



Figs 211–219. Male terminalia of *Irwiniella nuba*. 211, genitalia in lateral view; 212, right gonocoxite in intero-ventral view; 213, epandrium in dorsal view; 214, paraproct; 215, aedeagus in lateral view; 216, aedeagus in dorsal view; 217, hypandrium; 218, tergite 8; 219, sternite 8. Scale: 0·5 mm.

Palpi shorter than proboscis and with whitish pile. Upper part of frons dull blackish, rest of frons and other parts of head silvery whitish grey tomentose. Frons with a few pale or dark hairs. Face and genae bare. Occiput with dense whitish pile. About 6 post-ocular and 8 occipital setae on each side. First antennal segment blackish, with greyish tomentum and with comparatively long black pile. Rest of antennae brownish black, palest at extreme base of third segment. Apical section of style about 4 times as long as basal section.

Thorax. Ground-colour of mesonotum greyish. A broad brownish band along mid line (width about 0·35 mm), and more laterally two brownish grey bands which are less distinct. Mesonotal pile rather long (0·25 mm) and consisting of both blackish and pale hairs. 1 pair of *dc* setae. Scutellum mainly greyish, only brownish on median anterior part. Its pile long and mainly whitish. Pleura whitish grey with long pale pile.

Wings. Cell M_3 closed at wing-margin. Vein R_4 with the proximal part straight, distal part curved. Colour hyaline with pale brownish tinge, veins blackish brown. Knob of halteres yellowish white, but blackish around base.

Legs. F_1 and f_2 with 1–3 *av* setae. F_3 with 4–6 *av* setae which are rather short, weak, and mainly situated in apical half; also with a row of much shorter *pv* setae in apical two-thirds. T_1 with 2–4 *ad*, *pd* and *pv* setae, some of which are longer than width of t_1. T_2 and t_3 with the usual rows of setae, but only a few of them strong. Coxae and femora with extensively greyish tomentum and pale pile. Tibiae and tarsi of p_1 brownish black, of p_2 and p_3 more yellowish brown, but distinctly darkened in apical parts. Claws and pulvilli small.

Abdomen. All tergites and sternites covered with whitish grey tomentum. Along anterior margin of tergites 2–3 with a narrow, shining blackish band laterally. Distinct whitish hind-marginal seams on most segments. Pile entirely whitish.

Terminalia (Text-figs 211–219). Both epandrium and gonocoxites greyish, the former with pale hairs, the latter with mixed pale and blackish hairs. Epandrium as in Text-fig. 213. Paraproct (Text-fig. 214) forming a heart-shaped structure which continues towards the rear into a narrow sclerite in the intersegmental membrane. Stylus (Text-fig. 212) simple. Ventral lobe (Text-fig. 212) narrow and rather short. Hypandrium (Text-fig. 217) comparatively large and rather strongly fused with the gonocoxites. Phallus in lateral view (Text-fig. 215) forming a rather thick tube which is gradually curved about 90 degrees. In dorsal view (Text-fig. 216) it gradually decreases in width towards the tip. Dorsal apodeme in lateral view (Text-fig. 215) rather flat and slightly upcurved, in dorsal view (Text-fig. 216) a little wider than proximal part of phallus, its distal margin with lateral hooks. Ventral apodeme shaped like a flat trough which gradually widens towards the distal end. Ejaculatory apodeme simple, as in figures. Tergite 8: Text-fig. 218. Sternite 8: Text-fig. 219.

Total length 6·6–8·2 mm.

♀. *Head* (Text-fig. 184). Facial index 0·63. Frons with a dull blackish transverse band, the anterior margin of which is broadly separated from antennal bases. The area above the band brownish, and the area below the band whitish grey tomentose as is also rest of head. Frontal pile sparse and consisting of very short blackish hairs which are situated on both the whitish and blackish areas. Head otherwise as in the male.

Thorax as in male, but the three brownish mesonotal bands more distinct and the pile shorter.

Wings and *legs* as described for male.

Abdomen. Tergites 2 and 3 with shiny blackish triangular bands which reach hind margin in midline and occupy half tergal length laterally. Tergite 4 shiny blackish, sometimes whitish grey tomentose postero-laterally. Tergites 5–6 mostly whitish grey tomentose and with a blackish triangular area on posterior margin. Tergite 7 as tergite 4. Pile short and pale on tergites 1–3, blackish on tergites 4–7. Sternites greyish tomentose, the pile of the same colour as on the corresponding tergites.

Ovipositor with 2 × 6 slender, pointed, black terminal spines.

Total length 7·1–9·1 mm.

Remarks. Wiedemann described this species from a male specimen 'aus Nubien'.

The holotype is in the Senckenberg Museum, Frankfurt. It has lost the right third antennal segment, right hind tarsus, left p_2 and the abdomen except segment 1 and parts of segment 2. The wings are damaged posteriorly. The specimen agrees well with the description. It bears labels 'Abyssinia, Dr Rüppell' and '108', and has been labelled by Kröber (1911) as 'Psilocephala nuba Wied.'. Kröber (1912 : 117) also recorded a female specimen in the Vienna Museum as 'Type'. This specimen is labelled 'Natt., 1858, Egypt', and can therefore not be a syntype. I have removed the 'Type' label.

Psilocephala nigrifrons was described by Becker (1902 : 34) from 'Ein Männchen aus Aegypten in der Berl.zool.S. (Ehrenberg)'. The specimen is located in the Berlin Museum and bears two blue labels, 'Aegypt. Ehrbg.' and 'Psilocephala nigrifrons Becker', and a number '4152'. There is a fourth white label with 'Psilocephala nigrifrons Beck.'. The specimen is in fine condition and is conspecific with *nuba*. As it was not labelled as type, I have added a small circular 'Holotype' label. The synonymy with *nuba* was previously established by Kröber (1912 : 116).

Psilocephala taeniata was described by Becker (1923 : 62) from two female specimens. These are both in the Vienna Museum. The first specimen, labelled 'Bari, 6.–8.III.', is in rather good condition, although the third antennal segments, and right p_1 and p_3 are lost, and the wings are crumpled. The second specimen is labelled 'Sennar, 18.–24.II.' and is strongly discoloured. Both specimens come from 'Aegypt. Sudan' and were collected by Ebner in 1914. I hereby designate the specimen from Bari as the lectotype and have labelled it accordingly. The Sennar specimen is labelled as paralectotype. Becker's *taeniata* represents the female sex of Wiedemann's *nuba*.

Kröber (1933 : 296) recorded *taeniata* from specimens of both sexes originating from Sudan and deposited in the BMNH, and he gave a description of what he took to be the hitherto unknown male sex (= *nuba*). In the same paper Kröber described as new *Psilocephala sudanica* from a single female specimen. This is in the BMNH and has the following data: 'British Sudan, Sherdi, 1.II.1927, H. B. Johnston, Well. T.R.Labs, predatory on cotton aphids'. The specimen has lost both third antennal segments and all legs except right p_1. I have labelled it as holotype. I consider it to be conspecific with the types of *taeniata* and *nuba*.

The male specimen from Senegal recorded below is larger than specimens of *nuba* from NE. Africa. Its total length is 9·1 mm. The mesonotum is paler than in *nuba* and has a brownish band along the mid-line, while the lateral parts are only indistinctly greyish brown. Third antennal segment is also longer than in *nuba*. Tergite 2 has a distinct, though narrow, blackish basal band. The rest of the abdomen is completely discoloured. The terminalia are practically identical with the terminalia of an Egyptian *nuba* (Text-figs 211–219). This west African specimen may represent a distinct subspecies, but more material is needed for a description.

The flight period of *nuba* seems to be during the autumn and winter months, since all records are from the beginning of August to the beginning of March. The type of *sudanica* was stated to be predatory on cotton aphids. This is one of the very few records of the feeding activity of adult Therevidae (see comments on p. 254).

DISTRIBUTION. The species seems to be widespread in the northern desert and semi-desert areas, from Sudan and Ethiopia in the north to Kenya in the south, and to the west as far as Chad and Nigeria, and perhaps to Senegal. In the north the area of distribution probably extends within the limits of present-day Egypt, though it is difficult to assess correctly old labels like 'Aegypten', 'Nubien' and 'Abyssinia'.

MATERIAL EXAMINED.

Holotype ♂ of *nuba*, 'Nubien', i.e. northern part of SUDAN, the specimen labelled 'Abyssinia, Dr Rüppell' (SMF). Holotype ♂ of *nigrifrons*, 'Aegypten' (*Ehrbg.*) (ZMB). Lectotype ♀ of *taeniata*, SUDAN: Bari, 6–8.iii.1914 (*Ebner*) (NMW). Holotype ♀ of *sudanica*, SUDAN: Sherdi, 1.ii.1927 (*H. B. Johnston*) (BMNH). Paralectotype ♀ of *taeniata*, SUDAN: Sennar, 18.–24.ii.1914 (*Ebner*) (NMW).

EGYPT: 3 ♂, 1 ♀, 1858 (*Natt.*), as *Thereva annulata?* in Alte Sammlung, det. *Psilocephala nuba* by Kröber (NMW); 1 ♂, 1858, det *Psilocephala nuba* Wied., by Kröber (USNM). SUDAN: Khartoum, 1 ♀, 17.ii.1926, in house (*H. W. Bedford*) (BMNH); Chartoum, 1 ♂ (*Vierthaler*, Coll. H. Loew) (ZMB); Ed Damer, Hudeiba, 1 ♂, 1 ♀, 7.i. & 4.xi.1961 (*H. Remane*) (ZSM). ETHIOPIA: Eritrea, Mareb Bridge, 1 ♂, 2.ix.1960 (*D. J. Greathead*) (DJG); Eritrea, Ailet, 1 ♀, 18.ii.1956, 1 ♀, 3.iv.1957 (*D. J. Greathead*) (DJG). KENYA: Nairobi, Zone H., HZS 3181, 2 ♀, 4.x.1951 & 29.xii.1951 (*L. C. Edwards*) (BMNH); Archer's Post, Ewaso Nyiro River at 700 m, 2 ♀, 6 & 12.xii.1969, in sandy area (*M. E. Irwin & E. S. Ross*) (MEI). CHAD: Chari-Baquirni, 1 ♂, 4 ♀, 10–16.ii.1966 (*J. C. Hitchcock*) (USNM). NIGERIA: 19 km WNW. of Lagos, 1 ♀, 2.viii.1963 (*J. Riley*) (BMNH). Without locality, 1 ♂ as *nubica* in Coll. H. Loew, nomen nudum (ZMB). SENEGAL: Dakar, 1 ♂, ix. 1949 (*A. Villiers*) (IFAN), see remarks.

Irwiniella tomentosa (Becker) comb. n.

(Text-figs 185, 191, 220–227)

Psilocephala tomentosa Becker, 1914 : 120. Holotype ♂, TANZANIA (MP) [examined].
Psilocephala griseifrons Becker, 1914 : 121. Holotype ♀, KENYA or TANZANIA (MP) [examined]. **Syn. n.**
Psilocephala meridionalis Kröber, 1933 : 293. LECTOTYPE ♂, KENYA (BMNH), here designated [examined]. **Syn. n.**

DIAGNOSIS. ♂. Frons with hairs. First antennal segment (Text-fig. 191) with comparatively long pile. Mesonotum with a broad, brownish band; *dc* setae present. Lateral parts of tergite 4 with a tuft of long blackish hairs. Broad, blackish bands on tergites 2–4.

♀. Anterior margin of dark frontal area broadly separated from antennal bases. Tergite 4 almost entirely shining blackish.

REDESCRIPTION. ♂. *Head* (Text-fig. 191). Facial index 0·60. Eyes practically touching for a short distance. Proboscis reaching a little beyond level of antennal bases. Palpi a little shorter than proboscis, brownish grey with whitish pile. Upper part of frons dull black. Rest of frons and other parts of head silvery whitish grey tomentose. Lower part of frons with some long blackish hairs which extend to about level of antennal bases. Genae and occiput with long and dense whitish pile. About 10–12 post-ocular and a similar number of occipital setae on each side. First antennal segment blackish, with greyish tomentum and

long black hairs and setae. Second and third segments blackish, but more or less brownish on second and base of third segment. Apical section of style about twice as long as basal section.

Thorax. Ground colour of mesonotum dark greyish, partly subshining, along the mid-line with a broad, brownish band (width about 0·30 mm) flanked by pale greyish stripes. Mesonotal pile long (about 0·40 mm) and consisting of both blackish and whitish hairs. Scutellum greyish, with anterior median area more blackish; pile long and whitish. Pleura greyish with whitish pile. 1 pair of *dc* setae.

Wings. Cell M_3 normally closed at wing-margin. Vein R_4 with the proximal part straight, distal part curved. Colour hyaline, with a greyish brown tinge which may be rather distinct in streaks along the veins. Stigma brownish, veins dark brownish. Knob of halteres blackish.

Legs. F_1 and f_2 usually with a single *av* seta near middle. F_3 with 4–5 short and weak *av* setae in apical two-thirds and a row of much shorter *pv* setae. T_1 with only 2–3 *ad*, *pd* and *pv* setae, a few of which are longer than width of t_1. T_2 and t_3 with the normal four rows of setae. Coxae greyish. Femora blackish with comparatively thin greyish tomentum. Femoral pile long and whitish. T_1 entirely blackish brown. T_2 and t_3 more brownish, but often brownish black apically, or sometimes even intensely darkened all over as t_1. Tarsi coloured as their corresponding tibiae. Claws and pulvilli normal.

Abdomen. Tergites 2–4 with shining blackish anterior bands, the rest thickly covered with greyish tomentum. The blackish bands of tergites 2–3 occupying about half length of the tergites along the mid-line and only slightly narrow towards lateral margin. The blackish band of tergite 4 usually occupying less than half of tergal length, but this character rather variable. Other tergites entirely covered with greyish tomentum. Pile on tergites 1–3 long and entirely whitish. Pile on tergite 4 long and blackish on lateral margins, shorter and blackish on posterior margin, and whitish on rest of dorsal surface. Pile on tergites 5–7 entirely whitish, very long and erect on lateral margins. Yellowish white hind-marginal seams distinct on at least tergites 2–3. Sternites 1–4 mainly greyish tomentose, but more or less brownish black anteriorly. The following sternites mainly dark brownish, but more or less greyish on posterior margins. Pile on sternites exclusively whitish.

Terminalia (Text-figs 220–227). Epandrium and gonocoxites blackish, the former more or less greyish tomentose; pile on both structures blackish. Epandrium as in Text-fig. 225. Paraproct as in Text-fig. 224, i.e., continuing into a narrow sclerotization of the intersegmental membrane. Stylus as in Text-fig. 221. Ventral lobe short and narrow (Text-fig. 221). Phallus (Text-fig. 222) in lateral view forming a comparatively wide tube which is gradually curved for nearly 90 degrees; in dorsal view (Text-fig. 223) it narrows gradually. Dorsal apodeme (Text-fig. 222) with distal end upcurved, in dorsal view (Text-fig. 223) of gradually increasing width. Tergite 8: Text-fig. 226. Sternite 8: Text-fig. 227.

Total length 8·8–10·8 mm.

♀. *Head* (Text-fig. 185). Facial index 0·60. Frons with a dull blackish transverse band: the area above this band greyish brown, and the area below it silvery whitish tomentose like the rest of head. Frontal pile very short, blackish, and situated on both the whitish and blackish areas. Otherwise as in male.

Thorax. Chaetotaxy and colour as in male, but lateral areas of mesonotum darker and pile much shorter, adpressed and entirely black. Scutellum and pleura as in male, but pile shorter.

Wings. Cell M_3 open or closed. Colour with a more intensely brownish tinge than in male, especially in streaks along the veins. Other characters as in male.

Legs. F_1 and f_2 with 2–3 *av* setae. Femora more blackish and with shorter hairs, and t_2 and t_3 often intensely darkened on entire length. Otherwise as in male.

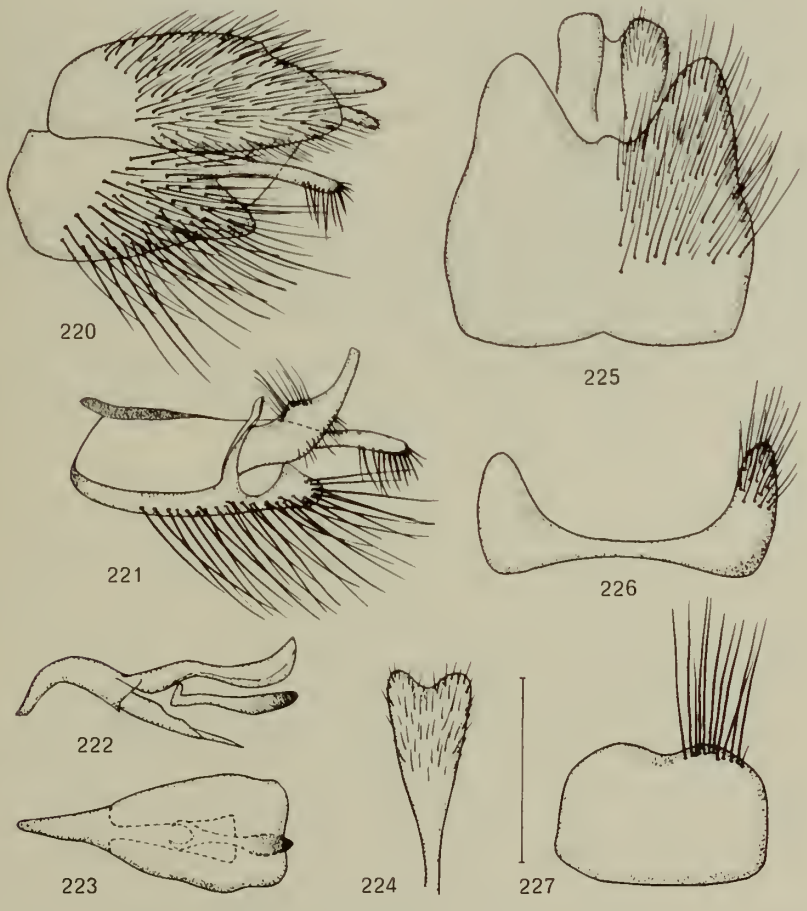
Abdomen. Tergites 2–3 shiny blackish with postero-lateral corners whitish grey tomentose; sometimes also hind margin tomentose. Tergites 4 and 7 totally black. Tergites 5–6 mostly whitish grey tomentose, more or less shiny black medially. Pile short, adpressed on tergites 1–4, more erect on the rest. Whitish in colour on the greyish areas of tergites 1–3, blackish on the rest. Sternites 1–4 greyish tomentose on posterior parts, more brownish black on anterior parts, but without a sharp line of demarcation. Other sternites brownish black and subshining.

Pile whitish on sternites 1–4, blackish on the rest. Ovipositor with 2 × 6 slender, pointed, black terminal spines.

Total length 9·9–11·6 mm.

Remarks. *Psilocephala tomentosa* was described by Becker from a single male specimen from Bububu, Zanzibar, collected in April 1912 by Ch. Alluaud and R. Jeannel. The holotype is in the Paris Museum and is in rather good condition, though right p_2, parts of right p_3, and left p_2 are lost. It bears labels which correspond to the information given in the original short diagnosis in Latin.

In the same paper Becker described *Psilocephala griseifrons* from a female specimen, also collected by Alluaud and Jeannel in November 1911. The type-locality was given as 'rivière Ramisi'. I have not been able to find this locality on any



Figs 220–227. Male terminalia of *Irwiniella tomentosa*, holotype. 220, genitalia in lateral view; 221, right gonocoxite in intero-ventral view; 222, aedeagus in lateral view; 223, aedeagus in dorsal view; 224, paraproct; 225, epandrium in dorsal view; 226, tergite 8; 227, sternite 8. Scale: 0·5 mm.

maps, but according to the labels on the holotype in the Paris Museum it is on the 'Côte d'Afrique or angl.', i.e. on the coasts of the African states Kenya or Tanzania. The holotype agrees well with the description and is in rather good condition, though the frons and abdomen are discoloured. This holotype represents the female sex of *tomentosa*.

Kröber's description of *meridionalis* was based on both sexes, and the types were stated to be in the BMNH. The syntypic series consists of a female specimen labelled 'Natal, Weenen, 2840 ft., I. 1924, H.P. Thomasset' and two male specimens labelled 'Dr van Someren, Rabai, May 1928'. This agrees with the information given by Kröber. Weenen is a locality some 100 km NNW. of Pietermaritzburg, Natal, and Rabai lies about 40 km NW. of Mombasa, Kenya. The female syntype, now labelled as paralectotype, is in good condition, though the right wing, right p_1 and p_3 and tibia and tarsus of left p_3 are lost. I hereby designate one of the male syntypes as lectotype of *meridionalis* and have labelled it accordingly. This lectotype has lost its antennae and right p_1 and p_3, and the right wing is curled, but otherwise it is in good condition. The second male syntype, now labelled as paralectotype, has lost its right third antennal segment and all legs except left p_3. The abdomen has been broken off, and is now glued to the thorax, but it is discoloured and crushed at tip.

The species has been collected in all months except June, July and August, but most specimens were taken in January. The species occurs both in sea-shore localities and in similar inland habitats like the shores of lakes and rivers. This is analogous to the common Palaearctic species, *Thereva annulata* (F.).

Distribution. The species is widely distributed in Africa south of the equator: Kenya, Tanzania, Congo, Angola, Botswana, Zambia, Mozambique, Rhodesia, and South Africa (Transvaal, Natal and Cape Prov.).

Material examined.

Holotype ♂ of *tomentosa*, Tanzania: Zanzibar, Bububu, st. 75, iv. 1912 (*Ch. Alluaud & R. Jeannel*) (MP). Holotype ♀ of *griseifrons*, Tanzania or Kenya: 'Rivière de Ramisi', xi. 1911 (*Ch. Alluaud & R. Jeannel*) (MP). Lectotype ♂ of *meridionalis*, Kenya: Rabai, v. 1928 (*Dr van Someren*) (BMNH). Paralectotype ♂ of *meridionalis*, Kenya: same data as lectotype (BMNH). Paralectotype ♀ of *meridionalis*, South Africa: Natal, Weenen, 875 m, i. 1924 (*H. P. Thomasset*) (BMNH).

Kenya: Kilifi Dist., West end Blue Lagoon, 1 mile W. of Watamu, sea level, coastal beach association, 11 ♂, 6 ♀, larval skins and empty pupae, 1.i.1970 (*M. E. Irwin*) (MEI & ZMC). Tanzania: Zanzibar, Nazi Moja, 1 ♂, x–xii. 1924 (*H. J. Snell*) (BMNH); Zanzibar, 1 ♂, i–ii. 1925 (*H. J. Snell*) (BMNH); Zanzibar, 1 ♀ (*E. de Ville*) (IRSNB); Dar es Salam, 1 ♀, 18.xi.1961 (*G. Heinrich*) (CNC); Tanga, 1 ♂, 15.xi.1966 (*D. O. Chanter*) (CNC); Molanje, 1 ♀, 7.ii.1913 (*S. A. Neave*) (BMNH); Chikala Dist., 1 ♀, i. 1913 (*Dr H. S. Stannus*) (BMNH); Ruo, 2 ♂, 13–15.v.1916 (*R. C. Wood*) (BMNH). Zambia: SW. of Chilwa, 2 ♂, 1 ♀, 15.i.1914 (*S. A. Neave*) (BMNH). Congo: 2 ♂ (*Dybowski*), 128–96 (MP). Angola: Marimba, Kabisa (or Kibisa) River, lake shore, 2 ♂, 17.i. 1910 (*J. B. Davey*) (BMNH); C. Angontland,

Luundi, 1 ♂, 27.i.1910 (*J. B. Davey*) (BMNH). Botswana: Tsessebe, 1 ♀, i .1956 (*Zumpt*) (NM); Maun, 1 ♀, i. 1955 (NM). Mozambique: Marromeu, Lower Zambesi River, Salone Forest, 1 ♀, xii. 1959 (*B. R. Stuckenberg*) (NM). Rhodesia, Lomagundi, 1 ♂, 22.ii.1940, Dept. Agric. (NM). South Africa: Transvaal, Lebombo Hills, 1 ♂ (*H. A. Junck*) (BMNH); Natal, Pietermaritzburg, 1 ♂, ix. 1956 (NM); Zululand, Mfongosi, 1 ♂, 1 ♀ (*W. E. Jones*) (SAM); Natal, Pinetown, 1 ♂, 20.i.1909 (*G. F. Leigh*) (TM); Cape Prov., Stellenbosch, 1 ♂, iii. 1915 (*Marley*) (SAM).

Irwiniella albohirta (Ricardo) comb. n.

(Text-figs 192, 228–235)

Psilocephala albohirta Ricardo, 1903 : 361; Kröber, 1912 : 137; Kröber, 1925 : 11; Kröber, 1933 : 289. LECTOTYPE ♂, Socotra (BMNH), here designated [examined].

Diagnosis. ♂. Frons bare. First antennal segment with comparatively long pile, third segment very narrow in apical half (Text-fig. 192). Genae with black pile. Mesonotum with a broad brown band; *dc* setae present. Femora unicolorous. All tergites whitish grey tomentose and with whitish pile.

♀. Unknown.

Redescription. ♂. *Head* (Text-fig. 192). Eyes practically touching for a rather long distance. Upper facets enlarged. Proboscis short, not reaching to level of antennal bases. Palpi a little shorter than proboscis, dark brownish and with long whitish pile. Upper part of frons blackish or brownish, lower part of frons and face with dark greyish tomentum. Frons and face bare. Genae with a group of short black hairs. Occiput whitish grey tomentose below, more dark greyish above. Occipital pile moderately long and whitish. First antennal segment blackish, but brownish translucent at tip. Second and third segments brownish, apex of third segment and style darker. Third segment remarkably narrow in apical half, basal part only twice as broad as apical part. Apical section of style twice as long as basal section; pile on first segment comparatively long.

Thorax. Mesonotum with a broad brownish median band (width about 0·55 mm); lateral parts of mesonotum paler. Mesonotal pile consisting of rather long (0·15 mm) blackish hairs and more adpressed, golden brownish hairs, 1 pair of *dc* setae. Scutellum with dense whitish pile, especially on posterior margin. Pleura greyish tomentose and with long whitish pile.

Wings. Cell M_3 closed and short petiolate. Vein R_4 narrowly S-curved. Colour rather intensely brownish grey, with darker shadows around the cross-veins. Stigma brownish; veins strong and dark brownish, but pale brownish on anterior part of wing. Knob of halteres blackish brown.

Legs. F_1 and f_2 with 1–2 *av* setae. F_3 with 4–5 *av* setae in apical half. Coxae greyish tomentose. Ground-colour of femora brownish black, paler brownish towards tips of f_1 and f_2 and on apical ventral surface of f_3. F_1 and f_2 thinly greyish tomentose, f_3 hardly tomentose. Tibiae yellowish brown at base, becoming gradually more blackish brown towards tips. Tarsi blackish brown, only lighter brownish on basal part of metatarsus of p_1 and p_2. Claws and pulvilli normal.

Abdomen. All tergites covered with a rather thin layer of whitish grey tomentum, the brownish black ground-colour being visible in caudal view. Pile long and entirely whitish. Sternites coloured as tergites, but less tomentose. Hind-marginal seams whitish, and present on most segments.

Terminalia (Text-figs 228–235). Blackish brown, epandrium paler brownish on posterior corners. Pile whitish on epandrium, blackish on gonocoxites. Epandrium as in Text-fig. 231. Paraproct (Text-fig. 230) forming a heart-shaped structure which continues into a narrow sclerotization of the intersegmental membrane. Distal end of dorsal gonocoxal process very long (Text-fig. 228). Stylus (Text-fig. 229) comparatively broad proximally. Hypandrium

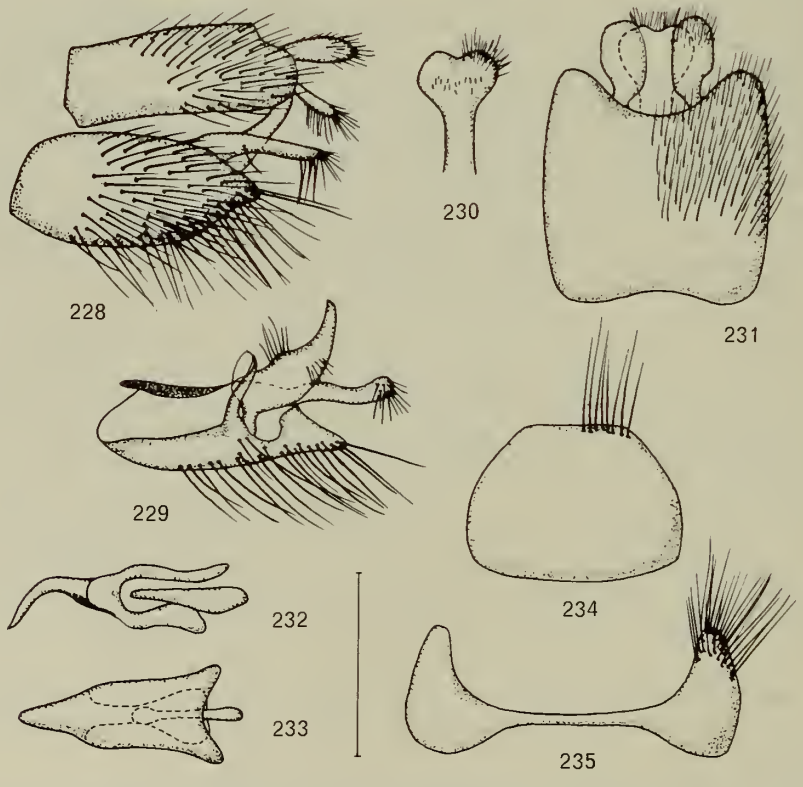
short and broad. Phallus in lateral view (Text-fig. 232) short and rather suddenly curved for less than 90 degrees; in dorsal view (Text-fig. 233) of almost the same shape as in *nuba*. The same is true of the dorsal, ventral and ejaculatory apodemes. Tergite 8: Text-fig. 235. Sternite 8 (Text-fig. 234) without incision on posterior margin.

Total length 9·0–9·4 mm.

♀. Unknown.

Remarks. The species was described from two male specimens from Socotra. They are in the BMNH and are labelled 'Socotra, Homhil, 2500 ft., 26.i.1899, W. R. O. Grant'. The first specimen, originally labelled 'Type', has lost both third antennal segments, right t_1, tarsi of right p_3, and left p_2. The second specimen has only lost the tarsi of right p_3. Both specimens are discoloured on head, thorax and abdomen. The first-mentioned specimen is hereby designated as lectotype and has been labelled accordingly. The second specimen has been labelled as paralectotype.

The specimens were collected on a dry stony path near the summit of the limestone range of Homhil. The species appeared to be both local and rare. Most of the



Figs 228–235. Male terminalia of *Irwiniella albohirta*, paralectotype. 228, genitalia in lateral view; 229, right gonocoxite in intero-ventral view; 230, paraproct; 231, epandrium in dorsal view; 232, aedeagus in lateral view; 233, aedeagus in dorsal view; 234, sternite 8; 235, tergite 8. Scale: 0·5 mm.

material recorded as *Thereva albohirta* by Kröber (1933 : 298) belongs to *Thereva analis*. True *albohirta* appear to be restricted to Socotra.

DISTRIBUTION. Probably endemic to Socotra.

MATERIAL EXAMINED.

Lectotype ♂, SOCOTRA: Homhil, 760 m, 26.i.1899 (*W. R. O. Grant*) (BMNH). Paralectotype ♂, same data as lectotype.

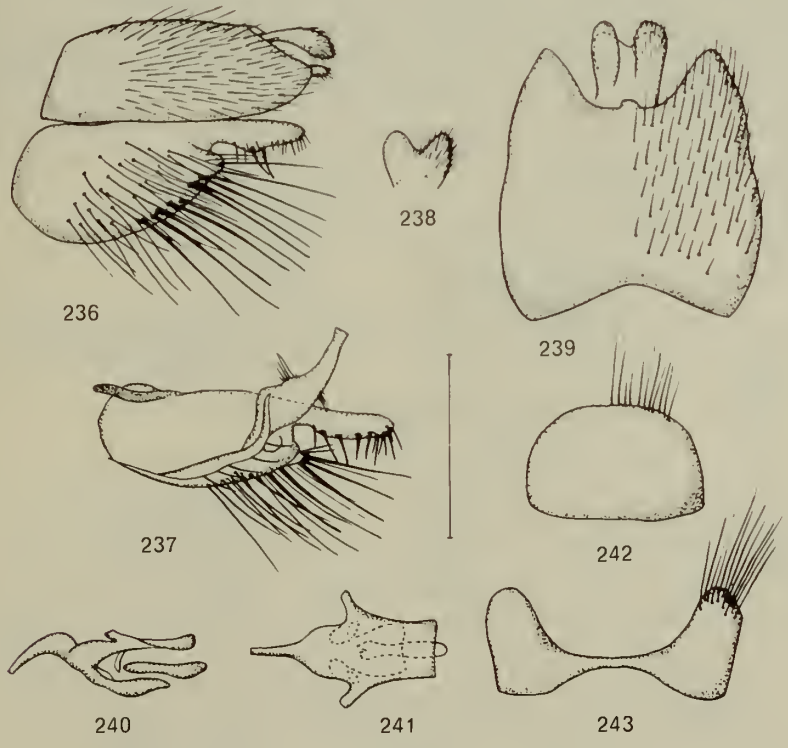
Irwiniella arabica sp. n.

(Text-figs 193, 236–243)

DIAGNOSIS. ♂. Frons with hairs. First antennal segment (Text-fig. 193) with comparatively short pile. Genae bare. About 2 × 11 setae on occiput. Mesonotum with a broad, brown middle band; *dc* setae absent. Femora unicolourous. All tergites with whitish tomentum and pile.

♀. Unknown.

DESCRIPTION. ♂. *Head* (Text-fig. 193). Facial index 0·58. Eyes practically touching



FIGS 236–243. Male terminalia of *Irwiniella arabica*, holotype. 236, genitalia in lateral view; 237, right gonocoxite in intero-ventral view; 238, paraproct; 239, epandrium in dorsal view; 240, aedeagus in lateral view; 241, aedeagus in dorsal view; 242, sternite 8; 243, tergite 8. Scale: 0·5 mm.

for a short distance. Proboscis reaching to level of antennal bases. Palpi distinctly shorter than proboscis, brownish with thin whitish tomentum and long whitish pile. Frons whitish tomentose, upper corner dull blackish; with two lateral groups of 5–6 black hairs. Face, genae and occiput also whitish tomentose. Face and genae bare; occiput with whitish pile and about 11 post-ocular and occipital setae on each side. Antennae brownish black, first and second segments whitish tomentose, first segment with moderately long black pile. Apical section of style about twice as long as basal section.

Thorax. Mesonotum whitish grey with a broad brownish band (ca 0·40 mm) and also with narrower dark bands laterally. Mesonotal pile consisting of both erect black hairs and adpressed whitish hairs. Scutellum greyish with the central area brownish; the pile whitish. Pleura whitish grey with whitish pile. *Dc* setae absent.

Wings. Cell M_3 narrowly open. Vein R_4 rather strongly curved. Colour brownish hyaline, slightly more intensely coloured along the veins. Stigma and veins dark brownish. Halteres yellowish brown, base of knob darkened.

Legs. F_1 and f_2 with 1 *av* seta. F_3 with 3–5 rather short *av* setae, and a few much shorter *pv* setae near tip. T_1 with about 3 *ad*, *pd* and *pv* setae. Coxae whitish grey. Femora blackish brown and slightly tomentose. Pile mainly whitish, rather short and partly scaly. Tibiae and tarsi yellowish brown, darker brownish towards tips, especially on t_1. Claws and pulvilli small.

Abdomen. All tergites and sternites with whitish tomentum and pile, tergites 2 and 3 narrowly brownish laterally near anterior margin. Hind-marginal seams whitish.

Terminalia (Text-figs 236–243). Epandrium and gonocoxites yellowish brown, the former with whitish pile, the latter with blackish pile. Epandrium as in Text-fig. 239. Paraproct as in Text-fig. 238. Stylus (Text-fig. 237) rather broad proximally, becoming narrow towards tip. Ventral lobe short and narrow. Phallus in lateral view (Text-fig. 240) short and rather strongly curved, in dorsal view (Text-fig. 241) broad at base and becoming rapidly narrower towards the long and narrow tip. Dorsal apodeme in dorsal view (Text-fig. 241) with two lateral offshoots, which separate the species from all other Ethiopian species. Tergite 8: Text-fig. 243. Sternite 8: Text-fig. 242.

Total length 7·6 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, SOUTHERN YEMEN: Lahoj, 19.ii.1895 (*C. G. Nurse*) (BMNH).

Irwiniella chapini (Curran) **comb. n.**

(Text-figs 194, 244–250)

Psilocephala chapini Curran, 1928 : 173; Kröber, 1933 : 295; Kröber, 1936 : 255. Holotype ♂, ZAIRE (AMNH) [examined].

Psilocephala pallidicornis Kröber, 1931 : 123. Holotype ♂, ZAIRE (ZIH) [examined]. **Syn. n.**

DIAGNOSIS. ♂. Frons with hairs. First antennal segment (Text-fig. 194) with comparatively short pile. Antennae yellowish. Genae narrow and with very short, blackish hairs. About 2 × 13 setae on occiput. Mesonotum with a broad, brown band; *dc* setae absent. Wings intensely brownish coloured. Femora bicoloured. All tergites entirely whitish grey tomentose, but tomentum thin on apical segments.

♀. Anterior margin of dark frontal area almost reaching to antennal bases (as in Text-fig. 186). First antennal segment long and with short pile. Femora bicoloured.

REDESCRIPTION. ♂. *Head* (Text-fig. 194). Eyes practically touching for rather a long distance. Proboscis reaching to level of antennal bases. Palpi much shorter than proboscis, dark brownish with whitish pile. Frons largely dull blackish, lateral parts of lower frons and also face whitish grey tomentose. Two lateral groups of short, black frontal hairs. Genae

narrow and dark brownish, with very short, black hairs. Occiput entirely greyish tomentose; on lower part with long whitish pile; above with about 13 post-ocular and occipital setae on each side. Antennae yellowish brown, apex of third segment and style darkened. First segment with short and sparse black pile. Apical section of style twice as long as basal section.

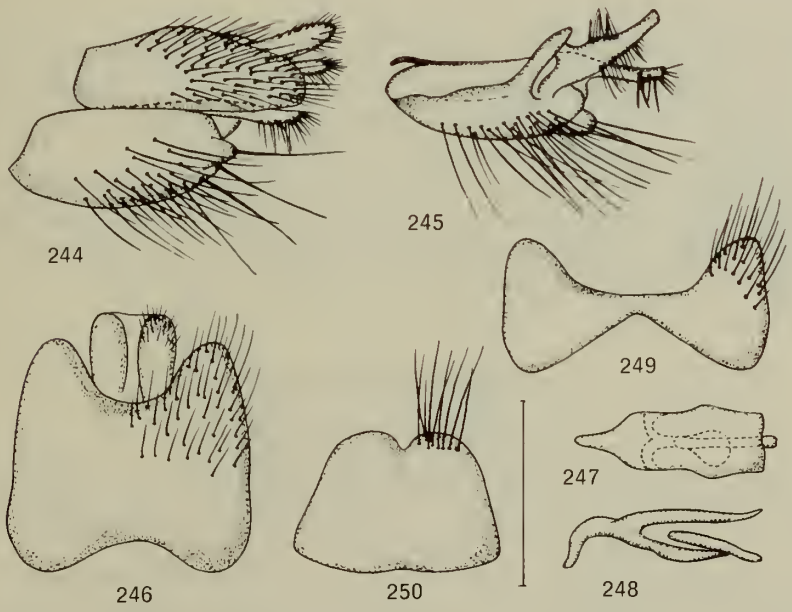
Thorax. Mesonotum with a broad dark brownish median band (ca 0·40 mm), flanked by two narrower pale greyish stripes. The areas situated laterally of these stripes darker greyish brown. Mesonotal pile short, adpressed and rather pale. Scutellum greyish with pale hairs. Pleura pale greyish, with sparse whitish pile. *Dc* setae absent.

Wings. Cell M_3 broadly open. Vein R_4 with an almost straight proximal part; distal part curved. Colour intensely brownish all over and with areas of still darker brownish colour. These areas include the stigma, a streak from anterior cross-vein to apex of discal cell, and streaks along the longitudinal veins, especially in apical part of wing. Halteres yellowish.

Legs. F_1 with 1–4 *av* setae. F_2 without av setae. F_3 with 4–5 short *av* setae and some still shorter pv setae along most of length. T_1 with 2–4 *ad*, *pd* and *pv* setae. Setae on t_2 strong but few, only 2–3 in each of the four rows. T_3 missing in the two males available for study. Coxae intensely greyish tomentose, their ground-colour brownish black. Femora bicoloured, most conspicuously on f_1 and f_2 where apical fourth to half is yellowish brown, the rest being blackish brown and only thinly tomentose. F_3 less distinctly bicoloured. Femoral pile mainly whitish and rather long. T_1 and fore tarsi blackish. T_2 and mid tarsi yellowish brown. Claws and pulvilli small.

Abdomen. All tergites entirely whitish grey tomentose, though thinly tomentose on the apical tergites which are therefore distinctly yellowish translucent on postero-lateral parts. Pile entirely whitish. Sternites 1–4 appearing whitish grey tomentose when seen from in front, the following sternites dull brownish.

Terminalia (Text-figs 244–250). Epandrium and gonocoxites yellowish brown and with



FIGS 244–250. Male terminalia of *Irwiniella chapini*, holotype. 244, terminalia in lateral view; 245, right gonocoxite in intero-ventral view; 246, epandrium in dorsal view; 247, aedeagus in dorsal view; 248, aedeagus in lateral view; 249, tergite 8; 250, sternite 8. Scale: 0·5 mm.

blackish pile. Epandrium as in Text-fig. 246. Paraproct weakly sclerotized; no sclerotization of the intersegmental membrane. Stylus and ventral lobe (Text-fig. 245) comparatively long and slender. Hypandrium broad and very short. Phallus in lateral view (Text-fig. 248) forming a short, rather wide tube which is curved for nearly 90 degrees; in dorsal view (Text-fig. 247) it is broad proximally and narrows rapidly into a slender apical part. Dorsal apodeme (Text-fig. 248) straight and flat, in dorsal view (Text-fig. 247) with two low lobes on lateral margin. Tergite 8: Text-fig. 249. Sternite 8: Text-fig. 250.

Total length 7·2–7·8 mm.

♀. *Head.* Facial index 0·59. Frons with a large, dull blackish area, the anterior margin of which projects to form an obtuse angle and nearly reaches the antennal bases (cf. Text-fig. 186). Upper part of frons dark greyish tomentose. Two rows of short frontal hairs above. Lateral parts of lower frons and face whitish grey tomentose and bare. Head otherwise as in male.

Thorax, wings and *legs* as in male.

Abdomen. Pattern on tergites basically as in *velutina*, but tergite 1 more intensely darkened on middle, and tergites 4 and 7 not tomentose laterally nor when seen in lateral view. Only sternites 1–3 partly greyish tomentose, the following sternites being dark brownish and subshining. Terminal spines of ovipositor very slender and pointed.

Total length 8·9–10·5 mm.

Remarks. The species was described from one male and three female specimens from Banana in Congo, collected in July-August 1915 (not 1916 as stated by Curran). Curran designated the male as holotype. The holotype, a female specimen labelled 'Type' (allotype) and a further female paratype are located in the American Museum of Natural History, New York. The fourth specimen, a female paratype, is in Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

Material examined.

Holotype ♂ of *chapini*, Zaire: Banana, 6°S. 12°20'E., vii. 1915 (*Lang & Chapin*) (AMNH). Holotype ♂ of *pallidicornis*, Zaire: Cabinda, 14.vii.1892 (*v. Röder*), (ZIH). Paratypes of *chapini*, Zaire: same locality as holotype, 3 ♀, 9.vii.1915, 5.viii.1915 and viii. 1915 (*Lang & Chapin*) (AMNH & MCT).

Zaire: Mayumbe Lemba, 1 ♂, 1–10.xii.1915 (*R. Mayné*), det. *Psilocephala chapini* Curr. by Kröber, 1935 (MCT); Boma, 1 ♂, 5.viii.1920 (*H. Schouteden*), det. *Psilocephala chapini* Curr. by Kröber, 1935 (MCT); Mayumbe, Buku Zambe, 1 ♀, 9.x.1924 (*A. Collart*), det. *Psilocephala chapini* Curr. by Kröber, 1935 (MCT).

Irwiniella pallida sp. n.

(Text-figs 188, 195, 251–257)

Diagnosis. ♂. Frons without hairs. First antennal segment with comparatively short pile (Text-fig. 195). Genae bare. About 2 × 12 setae on occiput. Mesonotum with a broad, brown band; *dc* setae present. Femora and tergites uniformly yellowish brown, thinly tomentose and with whitish pile.

♀. Frons (Text-fig. 188) very broad and with a large dark brownish area. Abdomen uniformly dirty yellowish brown.

Description. ♂. *Head* (Text-fig. 195). Facial index 0·79. Eyes practically touching for rather a long distance; upper facets distinctly enlarged. Proboscis very short, not reaching to level of antennal bases. Palpi as long as proboscis, yellowish, with whitish hairs; some black hairs at tip. Genae broadly rounded, not ridge-shaped as in *nuba*. Upper half or more

of frons and genae dull dark cinnamon-brown, an area above antennal bases silvery greyish tomentose with yellowish tinge; face with golden brownish tomentum. Frons, face and genae bare. Occiput whitish grey tomentose and with whitish pile. About 12 post-ocular and occipital setae on each side. Antennae brownish, first segment with yellowish grey tomentum and with a few rather strong setae and some blackish hairs; style darkened. Apical section of style only slightly longer than basal section.

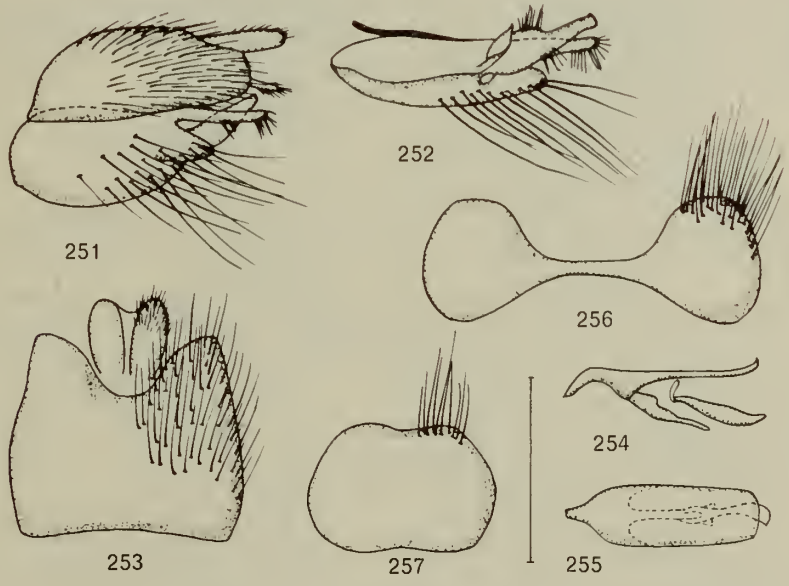
Thorax. Mesonotum greyish brown, with a dark brownish median band and two less distinct brownish stripes laterally. Mesonotal pile consisting of both blackish and pale hairs. Scutellum greyish brown and with whitish pile. Pleura thinly greyish tomentose and with whitish pile. 2 pairs of *dc* setae.

Wings. Cell M_3 broadly open. Vein R_4 with a straight proximal part, distal part curved. Colour uniformly greyish hyaline. Stigma faintly brownish, veins brownish. Halteres entirely yellowish.

Legs. F_1 and f_2 without setae. F_3 with about 5 *av* setae in apical half, and some much shorter *pv* setae. T_1 with 2–3 *ad*, *pd* and *pv* setae, of which only the *ad* are longer than width of tibia. T_2 with 3–4 *ad*, *pd*, *av* and *pv* setae, of which those in the two posterior rows are short. T_3 with setae in all four positions, but *pv* setae very short. Femora, tibiae and tarsi yellowish to yellowish brown, femora with only indistinct tomentum and whitish pile. Claws and pulvilli normal.

Abdomen. All tergites and sternites entirely pale yellowish brown, without pattern, and covered with long dense whitish pile.

Terminalia (Text-figs 251–257). Epandrium and gonocoxites yellowish brown, and with whitish pile like the rest of the abdomen, with only some black hairs on posterior part of gonocoxites. Epandrium as in Text-fig. 253. Paraproct weakly sclerotized as is the intersegmental membrane. Gonocoxite (Text-fig. 251) with posterior margin projecting and bearing



Figs 251–257. Male terminalia of *Irwiniella pallida*, holotype. 251, genitalia in lateral view; 252, right gonocoxite in intero-ventral view; 253, epandrium in dorsal view; 254, aedeagus in lateral view; 255, aedeagus in dorsal view; 256, tergite 8; 257, sternite 8. Scale: 0·5 mm.

a long dorsal gonocoxal process at distal end, the apex of which projects beyond the posterior corner of epandrium. Stylus in ventral view (Text-fig. 252) with a thickened tip with a small hook. Phallus (Text-fig. 254) very short and rather abruptly curved for about 60 degrees; in dorsal view (Text-fig. 255) broad proximally and narrowing rapidly. Dorsal apodeme flat and rectangular, only a little narrower towards distal end. Tergite 8: Text-fig. 256. Sternite 8: Text-fig. 257.

Total length 8·2 mm.

♀. *Head* (Text-fig. 188). Facial index 0·70. Frons broad and largely occupied by a dull dark brownish area. Lower frons with a yellowish grey tomentose transverse band. Upper part of occiput more brownish grey tomentose than in male. Other characters as in male.

Thorax. Mesonotum dull brownish with three paler greyish brown stripes, one narrow, one along the mid-line and two slightly broader ones more laterally. Anterior and lateral areas of mesonotum also more greyish brown. Mesonotal pile pale. Scutellum greyish brown with whitish pile. Pleura more whitish grey tomentose, but still with a brownish tinge. One pair of *dc* setae.

Wings. Cell M_3 and vein R_4 as in male. Colour darker than in male, as the ground-colour is distinctly greyish brown and darker brownish shadows are present around tips of basal and discal cells and around fork of veins R_4 and R_5.

Legs. F_1 with a single *av* seta near middle. F_2 without setae. F_3 with the same chaetotaxy as in male. Rest as in male.

Abdomen. All tergites and sternites with an almost uniformly dirty greyish brown colour; very thinly tomentose but appearing subshining. Without any distinct pattern. Pile short, sparse and pale. 6–7 terminal spines which are long and rather blunt-tipped.

Total length 9·1 mm.

MATERIAL EXAMINED.

Holotype ♂, MOZAMBIQUE: Delagoabai (*R. Monteiro*) (ZMB).

Paratypes. SOUTH AFRICA: Zululand, Dukuduku between St Lucia & Matubatuba, 1 ♀, 7–8.iv.1960 (*B. & P. Stuckenberg*) (NM); Zululand, Manguzi River, nr Maputa, 1 ♂, 1 ♀, xi–xii. 1945 (*H. W. Bell Marley*) (DM).

Irwiniella natalensis (Kröber) comb. n.

(Text-figs 187, 196, 258–264)

Psilocephala natalensis Kröber, 1914 : 37; Kröber, 1931 : 123. Holotype ♂, SOUTH AFRICA (destroyed).

DIAGNOSIS. ♂. Frons without hairs. First antennal segment with comparatively short pile (Text-fig. 196) and third segment with the apical part very slender. Genae bare or with a few pale hairs behind. About 2 × 10 setae on occipiut. Mesonotum with three distinct broad brownish grey bands; *dc* setae present. Femora greyish black with yellowish brown tips. Tergites whitish grey.

♀. Frons broad; its upper half (Text-fig. 187) pale brownish, but with narrow blackish brown band descending down to the greyish tomentose lower half of frons. Abdomen greyish to greyish brown, with darker brownish dull areas on anterior tergites.

REDESCRIPTION. ♂. *Head* (Text-fig. 196). Facial index 0·74. Eyes narrowly separated by one-third to half width of anterior ocellus. Upper facets slightly enlarged. Proboscis short, not reaching to level of antennal bases. Palpi almost as long as proboscis, greyish or slightly yellowish brown, with whitish hairs only. Genae evenly rounded, bare, or with a few white hairs behind. Frons largely silvery greyish tomentose, only extreme upper part dark greyish or brownish. Face silvery greyish tomentose, with a yellowish tinge on middle. Genae dull greyish black. Frons and face bare. Occiput entirely whitish grey tomentose and with whitish pile; 8–11 post-ocular and occipital setae on each side. Antennae brownish, first

and second segments with pale tomentum, thus appearing whitish grey to yellowish grey. Third segment may be darker brownish; characterized by the almost circular basal part and the narrow apical part. Style darkened, apical section 4–5 times as long as basal section.

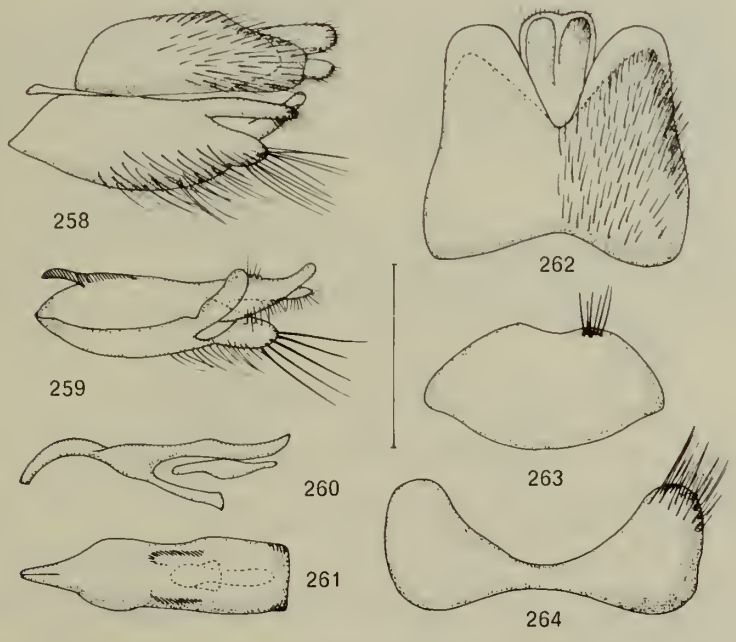
Thorax. Mesonotum pale greyish in ground-colour, with three distinct broad brownish grey bands, the lateral bands being interrupted on posterior part. Median band with a more or less distinct paler greyish mid-line. Mesonotal pile consisting of both pale and black hairs. Scutellum greyish with a brownish middle part, with whitish pile. Pleura greyish tomentose, the tomentum often with a brownish tinge on mesopleuron and sternopleuron; pile whitish. Usually 2 pairs of *dc* setae. Number of *sa* setae varying from 1 to 2, even in the same specimen.

Wings. Cell M_3 closed to broadly open. Vein R_4 rather strongly S-curved. Ground-colour rather variable, from almost whitish grey to more brownish grey. Wings strongly marked, partly due to very dark veins on the posterior part, and partly due to clouding around the veins; the cross-veins, fork of veins R_{4+5}, apex of vein R_1 and apex of cell M_3 in particular have strongly infuscate areas, whereas the stigma is remarkably pale brownish and very indistinct. Halteres with whitish yellow knob.

Legs. F_1 and f_2 with 1 or 2 short *av* setae. F_3 with 6–7 short *av* setae on apical two-thirds. T_1 with 3–4 *ad* and 2–3 *pd* and *pv* setae; t_2 with 2–4 *ad*, *pd*, *av* and *pv* setae. T_3 with rather numerous setae in all four positions, *pv* setae also well-developed. Femora blackish with yellowish brown tips, distinctly greyish tomentose. Femora and tarsi yellowish brown, tips of t_2 and t_3 and also the last tarsal segments darkened.

Abdomen. Tergites whitish grey tomentose, tergite 1 often with more or less brownish tomentum. Sternites greyish. Pile rather sparse, short and entirely whitish.

Terminalia (Text-figs 258–264). Epandrium and gonocoxites greyish and with mainly



FIGS 258–264. Male terminalia of *Irwiniella natalensis*. 258, genitalia in lateral view; 259, right gonocoxite in intero-ventral view; 260, aedeagus in lateral view; 261, aedeagus in dorsal view; 262, epandrium in dorsal view; 263, sternite 8; 264, tergite 8. Scale: 0·5 mm.

whitish pile, with some long black hairs only on posterior part of gonocoxites. Epandrium as in Text-fig. 262, with a remarkably broad lamellate posterior margin free of pile. Paraproct weakly sclerotized as is the intersegmental membrane. Gonocoxite (Text-fig. 258) with posterior margin projecting. Distal end of dorsal gonocoxal process (Text-fig. 258) long, but only slightly projecting beyond posterior margin of gonocoxite (compare with *pallida* (Text-fig. 251)). Stylus (Text-fig. 259) rather short and thick basally. Phallus (Text-fig. 260) rather long and strongly curved, in dorsal view (Text-fig. 261) decreasing gradually in width. Dorsal apodeme (Text-fig. 260) straight and flat, in dorsal view (Text-fig. 261) almost rectangular. Tergite 8: Text-fig. 264. Sternite 8: Text-fig. 263.

Total length 7·8–8·3 mm.

♀. *Head* (Text-fig. 187). Facial index 0·87. Frons very broad and with an irregular narrow transverse brownish black band on middle. The area above this band pale brownish tomentose, and the area below it greyish tomentose like the face. Upper part of occiput more greyish brown tomentose than in male and with 13–14 post-ocular and occipital setae. Other characters as in male.

Thorax. Mesonotum with the same pattern as in male, scutellum more brownish than in male. Otherwise as in male.

Wings and *legs* as in male, except the femora entirely yellowish brown. Both females available with cell M_3 broadly open.

Abdomen. Tergite 1 greyish brown tomentose. Tergites 2–4 greyish brown tomentose laterally, along posterior margin and on a broad mid-line; the rest of these tergites dark brownish tomentose on two large well-separated areas. The following tergites greyish brown tomentose, slightly darker medially than laterally. Sternites almost uniformly greyish brown. Abdominal pile short and pale yellowish. 7 + 7 very long and slender terminal spines.

Total length about 10 mm.

Remarks. Kröber described this species from a single male specimen from 'Port Durban, Natal, 28.Juli'. The holotype was stated to be in 'Koll. Bequaert, Brüssel'. It was destroyed during the 1914–18 war, according to a letter kindly sent to me by Dr Bequaert. No other specimens were available until Dr M. E. Irwin collected a good series of the species in 1971.

Material examined.

South Africa: Natal, Amanzimtobi, coastal dunes, 9 ♂, 2 ♀, 18.ix.1971 (*M. E. Irwin*) (NM & ZMC); Natal, Umhlanga Rocks, coastal dunes, 1 ♂, 24.x.1971 (*M. E. Irwin*) (NM); Natal, St Lucia Estuary, coastal dunes, 3 ♂, 24.xi.1971 (*M. E. Irwin*) (NM).

Irwiniella velutina (Kröber) comb. n.

(Text-figs 186, 197, 265–271)

Psilocephala velutina Kröber, 1912 : 124; Kröber, 1929 : 424; Kröber, 1931 : 124. LECTOTYPE ♂, Madagascar (USNM), here designated [examined].

Diagnosis. ♂. Frons bare and high. First antennal segment (Text-fig. 197) with short pile. Genae narrow and bare. About 2 × 10 setae on occiput. Mesonotum with a narrow brown stripe along mid-line; *dc* setae absent. Femora unicolourous. All tergites with whitish tomentum and pile.

♀. Anterior margin of dark frontal area almost reaching antennal bases (Text-fig. 186).

Redescription. ♂. *Head* (Text-fig. 197). Facial index 0·58. Eyes practically touching for rather a long distance. Proboscis reaching to level of apex of first antennal segment. Palpi much shorter than proboscis, greyish, with whitish pile. Upper part of frons dull

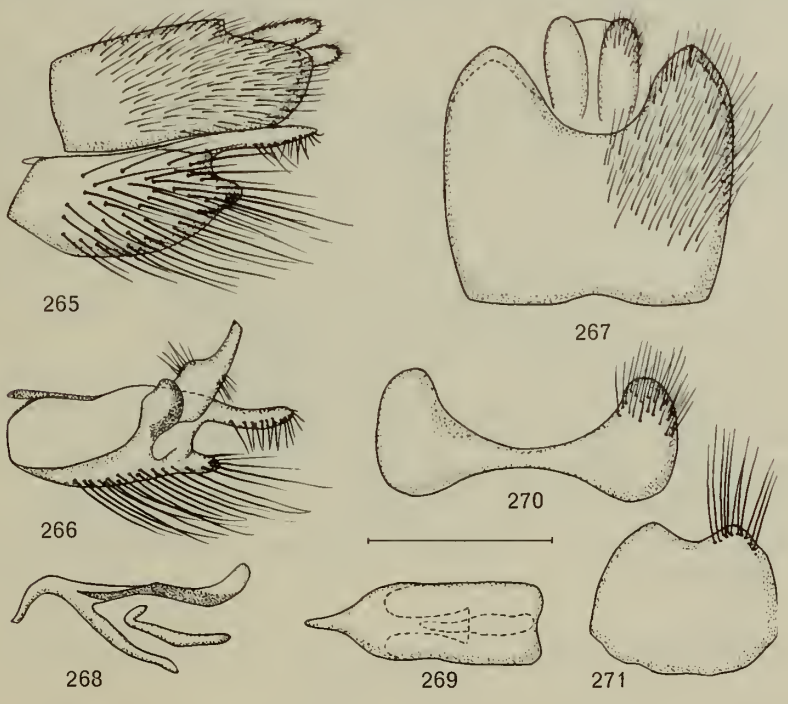
blackish, rest of frons and other parts of head silvery whitish grey tomentose. Frons, face and genae bare. Occiput with long whitish pile. About 10 post-ocular and occipital setae on each side, forming a continuous row; in some specimens a few additional setae below the upper post-oculars. First antennal segment greyish tomentose and with rather few, short, black hairs. Second and third antennal segments brownish black, apex of third segment and style black. Apical section of style about 5 times as long as basal section.

Thorax. Mesonotum whitish grey tomentose all over; with two indistinct, paler tomentose stripes and a narrow brownish tomentose stripe (width ca 0·05 mm) along mid-line. Pile rather short (0·15–0·20 mm) and consisting of mixed blackish and whitish hairs, the whitish ones situated mainly laterally. Scutellum greyish with whitish pile. Pleura whitish grey tomentose and with whitish pile. *Dc* setae absent.

Wings. Cell M_3 closed or narrowly open. Vein R_4 with proximal part straight; distal part curved. Colour hyaline with a greyish brown tinge, most intensely along the veins which are blackish. Stigma dark brownish. Knob of halteres brownish, but blackish around base.

Legs. F_1 and f_2 with 1–2 *av* setae. F_3 with about 4 short and weak *av* setae in apical half and a number of still shorter *pv* setae in about apical two-thirds. T_1 with 2–4 *ad*, *pd* and *pv* setae. T_2 and t_3 with the usual four rows of setae, the *pv* setae on t_3 being the shortest. Coxae and femora blackish with greyish tomentum and whitish pile. Tibiae mainly brownish, but t_1 extensively darkened in apical half or more, and t_2 and t_3 darkened at tips. Tarsi mainly blackish, metatarsi more or less brownish in basal parts. Claws and pulvilli normal.

Abdomen. All tergites intensely silvery whitish tomentose and with entirely whitish pile. Narrow whitish hind-marginal seams distinct on most segments. Sternites 1–4 whitish grey tomentose and with whitish pile, sternites 5–7 brownish grey with blackish pile.



FIGS 265–271. Male terminalia of *Irwiniella velutina*. 265, genitalia in lateral view; 266, right gonocoxite in intero-ventral view; 267, epandrium in dorsal view; 268, aedeagus in lateral view; 269, aedeagus in dorsal view; 270, tergite 8; 271, sternite 8. Scale: 0·5 mm.

Terminalia (Text-figs 265–271). Epandrium and gonocoxites blackish, epandrium partly tomentose, both with entirely blackish pile. Epandrium as in Text-fig. 267; its posterior corners broadly rounded and narrowly lamellate. Paraproct almost as in *nuba*. Stylus (Text-fig. 266) comparatively short, the lobe on middle of dorsal margin very low. Hypandrium taking the form of a rather broad but very short sclerite which is rather strongly fused to anterior ventral margins of gonocoxites. Phallus in lateral view (Text-fig. 268) forming a short narrow tube; in dorsal view (Text-fig. 269), broad proximally and tapering gradually. Dorsal apodeme (Text-fig. 268) straight and flat, with distal margin upcurved; in dorsal view (Text-fig. 269) with sidemargins parallel. Tergite 8: Text-fig. 270. Sternite 8: Text-fig. 271.

Total length 7·1–10·0 mm.

♀. *Head* (Text-fig. 186). Facial index 0·56. Frons with a dull blackish transverse band, the anterior margin of which almost reaches the antennal bases. The area above this band greyish brown tomentose. Rest of head whitish grey tomentose. Some very short hairs on upper half of frons. Rest of head as in male, including antennae.

Thorax. Chaetotaxy, colour and pile as in male, but mesonotum with a much broader brownish stripe along mid-line whose width equals 0·30–0·50 mm. Scutellum also brownish along mid-line. Otherwise as in male.

Wings and *legs* as described for male.

Abdomen. Tergites 2–3 shiny black with postero-lateral corners whitish grey tomentose. Tergite 4 black and tomentose laterally. Tergites 5–7 whitish grey tomentose and more or less blackish medially. Pile blackish on the black areas of tergites 1–4 and on the whole of tergites 5–7, whitish on the pale areas of tergites 1–4. Sternites 1–4 predominantly greyish, but often more or less brownish on middle. Sternites 5–7 dark brownish. Pile whitish on sternites 1–3, blackish on sternites 4–7. Ovipositor with 2 × 6 slender, pointed, black terminal spines.

Total length 8·4–10·4 mm.

Remarks. Kröber described both sexes of this species from material from Tamatave in Madagascar. He stated that the types were in his own collection, but as this was destroyed in Hamburg during the last war, the types it contained should be regarded as lost. In the U.S. National Museum there is a male that apparently belongs to the syntypic series. It is labelled 'Type', 'Madagascar, Tamatave', 'Type No. 24207, U.S.N.M.', and 'Psilocephala velutina Kröb., Kröber det. 1912'. It has lost both third antennal segments and parts of the legs, and is somewhat rubbed. This specimen is hereby designated as lectotype of *Psilocephala velutina* Kröber and it has been labelled accordingly.

The numerous captures by Dr Fred Keiser indicate that the species must be abundant. It is certainly a coastal species, and has been collected in the months of February, April, August, October and November. It is closely related to the two following species, *flavicornis* and *oldroydi*, which are also endemic to Madagascar, and the three species undoubtedly form a monophyletic group.

Distribution. Probably endemic to Madagascar and apparently widespread along the east coast.

Material examined.

Lectotype ♂, Madagascar: Tamatave (USNM).

Madagascar: Tam., Tamatave, 6 ♂, 2 ♀, 8–31.x.1957 (*F. Keiser*) (NMB); same locality, 13 ♂, 12 ♀, 23.x–3.xi.1958 (*F. Keiser*) (NMB); same locality, 1 ♂, iv. 1926 (*R. Decary*) (MP); same locality, 1 ♀ (MP); Tam., Foulpointe, 3 ♂, 1 ♀, 28.xi.1957

(*F. Keiser*) (NMB); Tam., Maroantsetra, 2 ♂, 30.iv.1958 (*F. Keiser*) (NMB); Fia., Mananjary, 14 ♂, 10 ♀, 5–21.viii.1958 (*F. Keiser*) (NMB); Tul., Fort-Dauphin, 1 ♂, 1 ♀, 15 & 24.ii.1958 (*F. Keiser*) (NMB); same locality, 1 ♂, x. 1901 (*Ch. Alluaud*) (MP); same locality, 3 ♂, 19.iv.1968 (*K. M. Guichard*) (BMNH).

Irwiniella flavicornis sp. n.

(Text-figs 198, 272–276)

Diagnosis. ♂. Similar to *velutina*, but antennae and palpi yellowish. Humeri, postalar calli and scutellum distinctly yellowish brown translucent, i.e. not thickly covered with whitish grey tomentum as in *velutina*. Femora yellowish brown in ground-colour and only thinly tomentose. Yellowish brown ground-colour of the abdomen also distinctly visible.

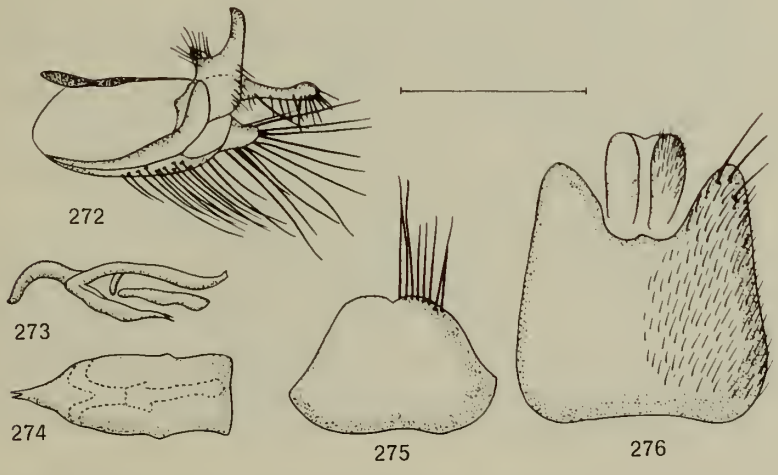
♀. Unknown.

Description. ♂. *Head* (Text-fig. 198). Facial index 0·50. Agreeing in most details with the head of *velutina*, but antennae and palpi yellowish. Both with very thin whitish tomentum, and antennal style black. Upper part of frons with a dull blackish area of smaller dimensions. Proboscis apparently more slender and also paler than in *velutina*. The tomentum more yellowish tinged on frons and face, and generally less dense than in *velutina*. Third antennal segment (Text-fig. 198) shorter than in *velutina*.

Thorax. Tomentum of mesonotum darker than in *velutina*, and very thin on lateral parts from humeri over notopleura to postalar calli and on to scutellum; all these areas thus appearing distinctly yellowish brown translucent. A brownish tomentose stripe along mid-line, much wider than in *velutina* and more diffusely demarcated. Pleura also less intensely tomentose. *Dc* sètae absent.

Wings as in *velutina*.

Legs. Chaetotaxy as in *velutina*. Coxae and femora yellowish brown to brown in ground-colour and only slightly tomentose, thus with almost the same colour as the tibiae. F_1 darkened on anterior surface. Tibiae distinctly paler than in *velutina*, i.e. with less darkened tips.



Figs 272–276. Male terminalia of *Irwiniella flavicornis*, holotype. 272, right gonocoxite in intero-ventral view; 273, aedeagus in lateral view; 274, aedeagus in dorsal view; 275, sternite 8; 276, epandrium in dorsal view. Scale: 0·5 mm.

Abdomen. All tergites appearing dark brown to yellowish brown, and only thinly tomentose.

Terminalia (Text-figs 272–276). Epandrium and gonocoxites brownish, the former with mainly pale hairs, the latter with entirely blackish pile. In lateral view the terminalia hardly distinguishable from those of *velutina* (Text-fig. 265). Epandrium (Text-fig. 276) distinctly different in shape from that of *velutina*. Stylus (Text-fig. 272) much wider proximally than in *velutina*, and with a pointed lobe on middle of dorsal margin. Aedeagus (Text-figs 273–274) almost as in *velutina*. Sternite 8 (Text-fig. 275) also differently shaped.

Total length 9·3 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Maj., Ambato-Boeni, 23.iv.1958 (*Fred Keiser*) (NMB).
Paratype ♂, same data and depository as holotype.

Irwiniella oldroydi sp. n.

(Text-figs 199, 277–281)

DIAGNOSIS. ♂. Similar to *velutina* and *flavicornis*. Antennae partly yellowish, partly blackish. Thorax thickly tomentose as in *velutina*, the tomentum more brownish grey in appearance. Femora yellowish brown, but f_1 may be darkened. Abdomen with thick tomentum covering the ground-colour as in *velutina*.

♀. Easily distinguished from the female of *velutina* by the differently coloured abdomen. The lateral tergal areas, which are whitish grey tomentose in *velutina*, are non-tomentose in *oldroydi* and appear yellowish brown.

DESCRIPTION. ♂. *Head*. Facial index 0·54. Dark coloured area on upper frons much smaller than in *velutina*; tomentum on rest of head less silvery whitish than in *velutina* and with a distinct greyish brown tinge. Only about 8 post-ocular and occipital setae on each side, all short and weak. First, second and base of third antennal segments yellowish brown, thinly whitish tomentose and with short black pile. Rest of third segment and style blackish brown. Palpi darkened at base, yellowish brown at tip.

Thorax tomentose all over, i.e. the ground-colour not visible anywhere as in *flavicornis*. Tomentum darker greyish than in *velutina*; a pale greyish brown median band with a darker brownish stripe along the mid-line is present.

Wings more intensely brownish grey tinged than in *velutina*, especially along the veins. Knob of halteres yellowish, but brownish around base.

Legs. Chaetotaxy as in *velutina*. F_1 brownish black and thinly tomentose in the holotype, but paler brownish in ground-colour on ventral surface. F_2, f_3 and all tibiae yellowish brown to brownish, darkened at tips. The paratypes also with f_1 yellowish brown.

Abdomen intensely whitish grey tomentose and with entirely whitish pile.

Terminalia (Text-figs 277–281). Epandrium mainly whitish grey tomentose, but with a broad yellowish brown rim on postero-lateral corners. Gonocoxites blackish grey. Pile on epandrium short and whitish, on gonocoxites long and blackish. Terminalia in lateral view almost as in *velutina* (Text-fig. 265). Epandrium (Text-fig. 277) very large, the posterior corners sharply pointed and broadly lamellate. Cerci comparatively weakly sclerotized and only reaching to level of apex of posterior corners of epandrium. Stylus (Text-fig. 278) with a long narrow apical part and a moderately pointed lobe in middle. Aedeagus (Text-fig. 281) shorter and wider than in *velutina*. Sternite 8: Text-fig. 279.

Total length 8·8–10·0 mm.

♀. *Head* (Text-fig. 199). The single specimen available is discoloured. Frons broader than in *velutina* (Text-fig. 186), and the blackish spot on middle lower, broader, and more widely separated from antennal bases. Other parts of the head intensely tomentose. Colour

of tomentum difficult to describe, but certainly as in male. Antennae coloured as in male. Style subapical in position on the outer surface, as the inner apex of third segment has a large extension (Text-fig. 199).

Thorax. Ground-colour of scutellum yellowish brown and only slightly tomentose. Rest of thorax discoloured.

Wings. Coloured as in the male.

Legs. As in the male. All femora yellowish brown, only the knees narrowly blackish.

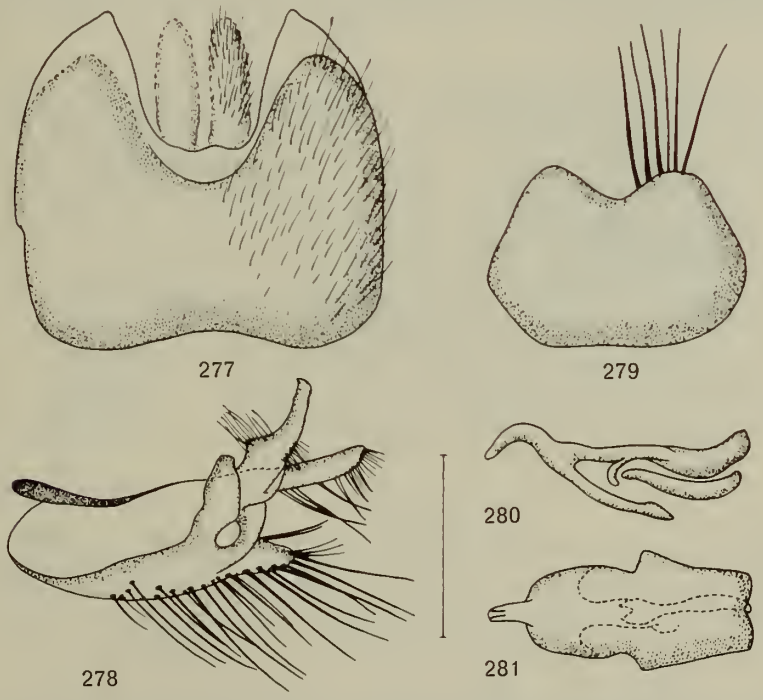
Abdomen. Ground pattern as in *velutina*, but tergite 4 also with pale postero-lateral corners, and the pale lateral areas on all tergites (2–7) yellowish brown and not distinctly tomentose. The dark areas brownish black and subshining. Sternites also extensively yellowish brown laterally and posteriorly.

Total length 11·7 mm.

MATERIAL EXAMINED.

Holotype ♂, MADAGASCAR: Isalo km P.713, 1000 m, 19.iii.1968 (*K. M. G. & P. D.*) (BMNH).

Paratypes. MADAGASCAR: same data as holotype, 1 ♀ (BMNH); Ampanihy, 250 m, 1 ♂, 16–18.ii.1958 (*B. Stuckenberg*) (NM); Sept-Lacs, 100 m, dct. Tuléar, 1 ♂, 13–16.ii.1958 (*B. Stuckenberg*) (ZMC).



FIGS 277–281. Male terminalia of *Irwiniella oldroydi*, holotype. 277, epandrium in dorsal view; 278, right gonocoxite in intero-ventral view; 279, sternite 8; 280, aedeagus in lateral view; 281, aedeagus in dorsal view. Scale: 0·5 mm.

Irwiniella maritima (Bezzi) comb. n.

(Text-figs 200, 282–290)

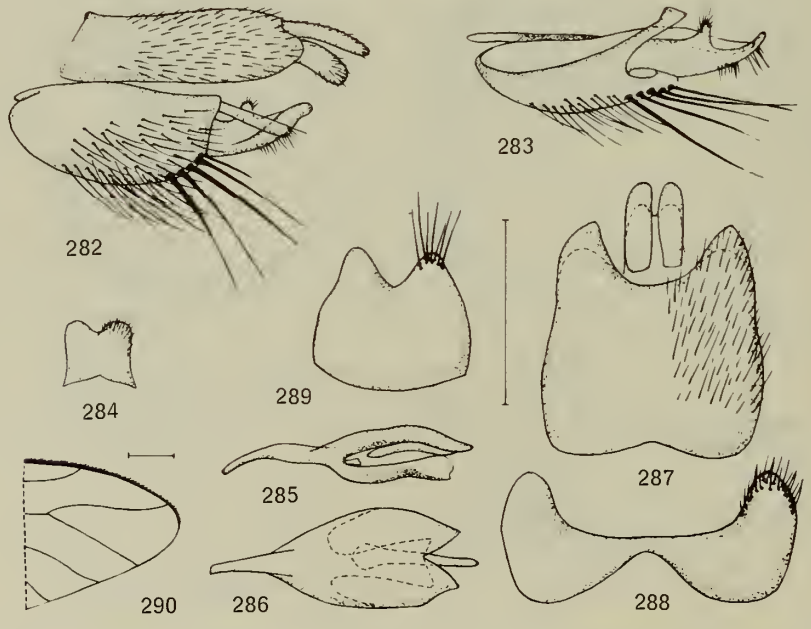
Psilocephala maritima Bezzi, *in* Bezzi & Lamb, 1926 : 544. LECTOTYPE ♂, Rodrigues I. (BMNH), here designated [examined].

Diagnosis. ♂. Frons with hairs. First antennal segment with comparatively long pile (Text-fig. 200) and slightly thickened. Genae with whitish hairs. About 2 × 25 setae on occiput. Mesonotum with broad, brown bands; *dc* setae present. Femora unicolourous. All tergites with whitish grey tomentum and whitish pile.

♀. Anterior margin of dark frontal area broadly separated from antennal bases. Third antennal segment short. Tergites 4–6 largely greyish with dark triangles on anterior parts.

Redescription. ♂. *Head* (Text-fig. 200). Facial index 0·75. Eyes practically touching for rather a short distance. Proboscis reaching a little beyond level of antennal bases. Palpi rather shorter than proboscis, greyish, with pale hairs. Upper part of frons dull blackish brown, rest of frons and other parts of head whitish grey to greyish tomentose. Frons with a few rather long, black hairs. Face bare. Genae and occiput with long whitish pile. Numerous strong black post-ocular and occipital setae on each side of occiput. Antennae with first, second and base of third segments greyish tomentose, rest of third segment blackish. Third segment rather brownish at base. First segment thickened and with a dense cover of long black setae and hairs. Apical section of style 3 times as long as basal section.

Thorax. Mesonotum with three broad brownish bands, separated by two narrow pale greyish stripes. Anterior, posterior and lateral parts of mesonotum also pale greyish. Pile on mesonotum long, blackish and erect. Scutellum grey with pale pile along posterior margin. Pleura greyish with long pale pile. 2 pairs of *dc* setae.



Figs 282–290. Male terminalia and wing-tip (290) of *Irwiniella maritima*, lectotype. 282, genitalia in lateral view; 283, right gonocoxite in intero-ventral view; 284, paraproct; 285, aedeagus in lateral view; 286, aedeagus in dorsal view; 287, epandrium in dorsal view; 288, tergite 8; 289, sternite 8; 290, wing-tip. Scale: 0·5 mm.

Wings (Text-fig. 290). Cell M_3 open. Vein R_4 very narrowly S-curved. Colour hyaline with a greyish brown tinge. Stigma very distinct and brownish. Veins dark brownish, indistinctly clouded around the cross-veins. Knob of halteres dark brownish.

Legs. F_1 with 1 *av* seta. F_2 without setae. F_3 with a row of *av* setae. T_1 with 2–3 *ad*, *pd* and *pv* setae. T_2 and t_3 with the normal four rows of setae, the *ad* setae on t_2 being very strong, the *pv* setae on t_3 short and few. Coxae greyish tomentose. Femora blackish, only thinly tomentose, posterior surfaces of f_1 and f_2 with long blackish hairs, and all femora with pale scaly hairs. Tibiae and metatarsi yellowish brown with dark brownish tips. Other tarsal segments blackish brown. Claws and pulvilli normal.

Abdomen. All tergites entirely whitish grey tomentose and with whitish pile. Whitish hind-marginal seams distinct on most segments. Sternites 1–4 whitish grey tomentose, sternites 5–7 more dark greyish. All sternites with whitish pile.

Terminalia (Text-figs 282–289). Epandrium and gonocoxites greyish tomentose and with pale pile, with some long blackish setae on posterior ventral margin of gonocoxites. Epandrium as in Text-fig. 287. Paraproct as in Text-fig. 284, i.e. not connected with any sclerotized area of the intersegmental membrane. Gonocoxite in lateral view (Text-fig. 282) remarkably short and truncate posteriorly, the stylus almost apical in position. In ventral view (Text-fig. 283) the stylus with a high narrow lobe on middle of dorsal margin, the tip itself narrow. Ventral lobe long and narrow. Hypandrium short and broad. Phallus (Text-fig. 285) long and only slightly downcurved, in dorsal view (Text-fig. 286) narrowing slightly towards apex. Dorsal apodeme (Text-fig. 285) slightly curved, in dorsal view (Text-fig. 286) oval, the distal margin with a V-shaped incision. Tergite 8: Text-fig. 288. Sternite 8 (Text-fig. 289) with a remarkable deep incision.

Total length 7·8 mm.

♀. *Head*. Upper two-thirds of frons mat brownish and with rather a dense pile of blackish hairs. Lower third of frons yellowish grey and with a few blackish hairs. Other characters as in male.

Thorax. Mesonotum with the same three broad brown bands as in male, but the stripes separating these bands and also the anterior, posterior and lateral parts of mesonotum yellowish grey to brownish grey, not pale greyish as in male. Pile consisting of short black erect hairs and longer, pale adpressed hairs. Scutellum, pleura and chaetotaxy as in male.

Wings. As in male, including the very narrow curvature of vein R_4.

Legs. Chaetotaxy and colour as in male, with the following exceptions: femora more greyish tomentose, and f_1 and f_2 with shorter and paler pile on posterior surfaces.

Abdomen. Tergite 1 mainly pale greyish. Tergites 2–4 with large blackish brown bands on anterior parts, which occupy at least two-thirds of tergal length along the mid-line and narrow towards the lateral margin; posterior parts pale greyish. Tergites 5–7 pale greyish with more or less distinct, dark, triangular anterior spots along mid-line. Pile pale and adpressed on dark bands of tergites 2–4, black and erect on lateral parts of tergites 3 and on entire surface of tergites 4–7. Sternites greyish with erect pile which is pale on sternite 2 but black on the following sternites. Ovipositor with 2 × 6 terminal spines which are black and blunt-tipped.

Total length 7·8–8·0 mm.

Remarks. Bezzi described *Psilocephala maritima* from 9 male and 5 female specimens from Rodrigues I. I have been able to locate 8 male and 5 female syntypes. Three males and 3 females are in the BMNH, whilst 5 males and 2 females are in the Cambridge Museum. All 13 specimens are labelled 'Rodrigues I., VIII–IX 1918. H. P. Thomasset and H. J. Snell'. The BMNH specimens are further labelled 'Rodrigues I., Pres. by Dr H. Scott, B.M. 1926–190'. These 13 syntypic specimens include 2 species, clearly distinguishable by both external and genitalic characters. One of the male syntypes in the BMNH is labelled as type

by Bezzi and belongs to the species which agrees best with the original description. This male is hereby designated as lectotype of *Psilocephala maritima* and has been labelled accordingly. All the other males belong to the other species, which is described below as *Irwiniella bezzii*. The 5 female specimens all belong to *maritima*. See also discussion on p. 253.

Material examined.

Lectotype ♂, Rodriguez I.: viii–ix. 1918 (*H. P. Thomasset & H. J. Snell*) (BMNH). Paralectotypes, 5 ♀, same data as lectotype (BMNH & CM).

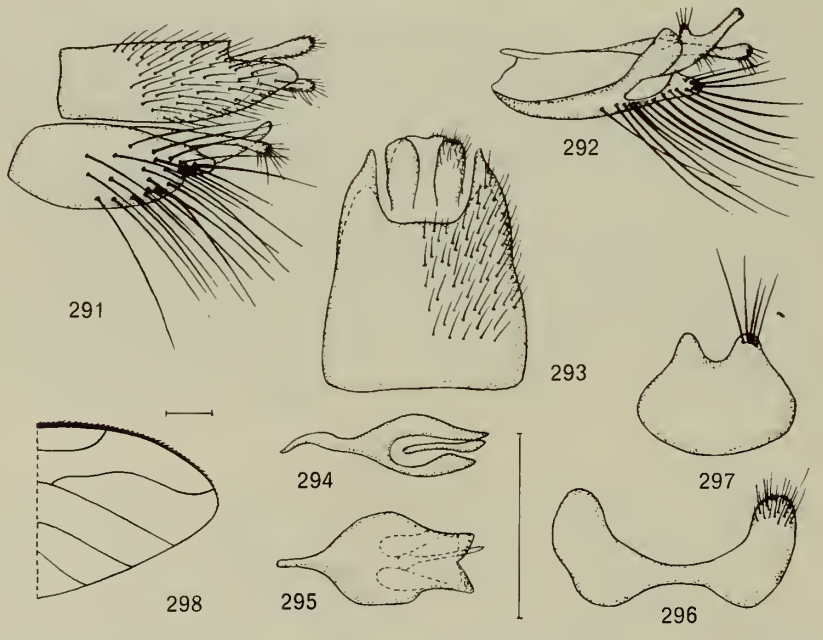
Irwiniella bezzii sp. n.

(Text-figs 201, 291–298)

Diagnosis. ♂. Frons with hairs. First antennal segment with comparatively long pile (Text-fig. 201), not thickened. Genae with blackish hairs. About 2 × 25 setae on occiput. Mesonotum greyish with an indistinct, narrow brown stripe along the mid-line; *dc* setae present. Femora unicolourous. All tergites with whitish grey tomentum and whitish pile.

♀. Unknown.

Description. ♂. Head (Text-fig. 201). Facial index 0·60. Eyes practically touching on frons, as in *maritima*, but less widely separated on lower part of head; compare facial indices. Genae also narrower than in *maritima*, i.e. virtually invisible in lateral view. Frons with more



Figs 291–298. Male terminalia and wing-tip (298) of *Irwiniella bezzii*, holotype. 291, genitalia in lateral view; 292, right gonocoxite in intero-ventral view; 293, epandrium in dorsal view; 294, aedeagus in lateral view; 295, aedeagus in dorsal view; 296, tergite 8; 297, sternite 8; 298, wing-tip. Scale: 0·5 mm.

black hairs than in *maritima* and not distinctly brownish black above, this frontal pile not reaching beyond level of antennal bases. Palpi with black hairs basally, and genae with a group of black hairs. Antennae narrower than in *maritima*, and pile of first segment shorter, though still long if compared with the other species. Apical section of style 2·5 times as long as basal section.

Thorax. Mesonotum with three broad dark greyish bands separated by two narrow pale greyish stripes. Anterior, posterior and lateral parts of mesonotum also pale greyish. The median band with a more or less distinct, narrow brownish stripe along the mid-line, and the lateral bands may also have a brownish tinge, especially behind the suture. Mesonotal pile blackish and consisting of both erect and adpressed hairs. Scutellum, pleura and chaetotaxy as in *maritima*.

Wings (Text-fig. 298). Vein R_4 with rather different curvature than in *maritima* (cf. Text-figs 290, 298). Other characters as in *maritima*, but the colour more intensely greyish brown and veins also darker.

Legs. As in *maritima*, with the following exceptions: F_1 without *av* setae, femora more greyish tomentose, and blackish pile on f_1 and f_2 shorter.

Abdomen. Colour and pile as in *maritima*, but sternites 5–7 with more blackish hairs.

Terminalia (Text-figs 291–297). Epandrium and gonocoxites greyish tomentose as in *maritima*. Epandrium with whitish pile, but gonocoxites with very long blackish pile. Epandrium as in Text-fig. 293, its posterior corners distinctly longer than in *maritima*. Gonocoxite in lateral view (Text-fig. 291) with a short finger-like projection posteriorly. Stylus (Text-fig. 292) narrower proximally than in *maritima*, and with a less pointed tip. Ventral lobe shorter and broader. Phallus (Text-fig. 294) shorter than in *maritima*, in dorsal view (Text-fig. 295) broader proximally, and dorsal apodeme shorter than in *maritima*. Tergite 8: Text-fig. 296. Sternite 8 (Text-fig. 297) with the same deep incision as in *maritima*, but differently shaped.

Total length 6·4–8·1 mm.

♀. Unknown.

REMARKS. See discussion on p. 253.

MATERIAL EXAMINED.

Holotype ♂, RODRIGUES I.: viii–ix. 1918 (*H. P. Thomasset & H. J. Snell*) (BMNH).

Paratypes. 5 ♂, same data as holotype (BMNH, CM and ZMC). The six specimens formed part of the syntypic series of *Psilocephala maritima* Bezzi (see p. 283).

Irwiniella semiargentea (Kröber) comb. n.

(Text-figs 202, 299–305)

Psilocephala semiargentea Kröber, 1913 : 263; Frey, 1958 : 7. Holotype ♂, CAPE VERDE Is. (MG) [not examined].

DIAGNOSIS. ♂. Frons with hairs extending below level of antennal bases. First antennal segment (Text-fig. 202) with long pile. Genae with black hairs. About 2 × 28 setae on occiput. Mesonotum indistinctly brownish and with brownish grey stripes; *dc* setae present. Femora unicolourous. All tergites with silvery whitish tomentum and pile.

♀. Frons nearly unicolourous, brownish tomentose all over, i.e. without a distinct dark area as in Text-fig. 184.

REDESCRIPTION. ♂. *Head* (Text-fig. 202). Facial index 0·63. Eyes practically touching for a short distance. Proboscis reaching to or a little beyond antennal bases. Palpi a little shorter than proboscis, greyish black with black hairs. Frons blackish at extreme top and on a narrow stripe along eye-margin in upper part; rest brownish grey tomentose. Two lateral

groups of comparatively long, blackish hairs which extend a little beyond level of antennal bases. Face, genae and occiput whitish grey to ashy grey tomentose. Face bare, genae with stiff blackish pile. Lower occiput with soft and long whitish pile; upper occiput with numerous post-ocular and occipital setae, about 28 on each side. Antennae with first and third segments comparatively long. Colour blackish, first and second segments greyish tomentose, and first segment with long black pile. Apical section of style about 4 times as long as basal section.

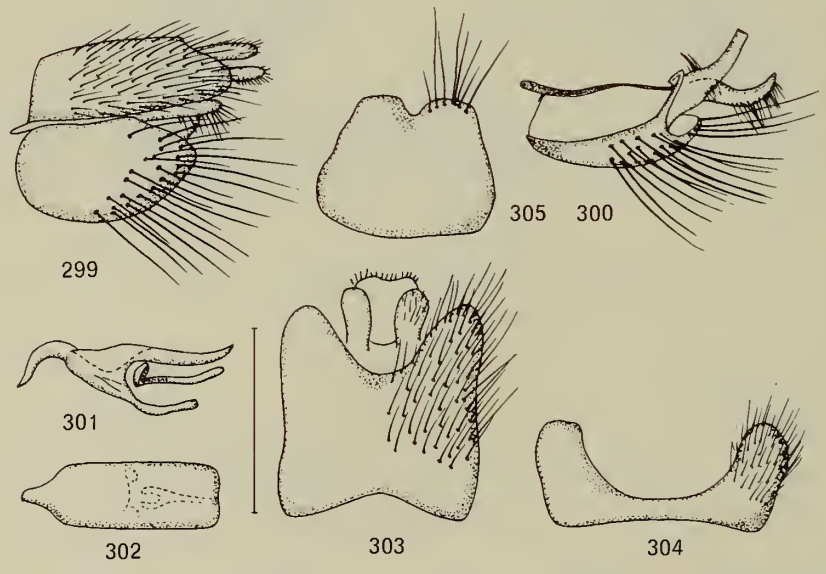
Thorax. Mesonotum brownish and with brownish grey stripes, but the stripes are not conspicuous. Seen from in front, two narrow (about 0·15 mm) brownish stripes visible, separated by a more brownish grey stripe (width about 0·10 mm) along the mid-line, and flanked by greyish brown stripes. More laterally with additional brownish stripes. Mesonotal pile apparently long (about 0·25 mm), erect and black, but also including adpressed, pale hairs. Scutellum more greyish. Pleura with greyish to greyish brown tomentum and whitish pile. 1–2 pairs of *dc* setae.

Wings. Cell M_3 rather widely open. Vein R_4 with proximal part very straight; apical part only slightly curved. Colour brownish hyaline, slightly more intensely along cross-veins. Stigma pale brownish, distinctly paler than the blackish brown veins. Halteres yellowish brown.

Legs. F_1 with 1 *av* seta near middle. F_2 without *av* setae, but with 2 short *pv* setae at base of apical third. F_3 with 4–5 rather long *av* setae, and some short *pv* setae near tip. T_1 with 2–4 *ad*, *pd* and *pv* setae, most of which are longer than width of t_1. T_2 and t_3 with the normal four rows, but *pv* on t_3 few and short. Coxae brownish grey tomentose like the pleura. Femora blackish and thinly greyish tomentose, pile on posterior parts of f_1 and f_2 long and consisting of blackish and whitish hairs. Tibiae and tarsi yellowish brown, becoming darker towards tips. Claws and pulvilli small.

Abdomen. All tergites silvery whitish tomentose, with whitish pile, and with distinct whitish hind-marginal seams. Tergites 2–4 sometimes narrowly brownish on anterior part near lateral margin. Sternites 1–3 greyish, sternites 4–7 more brownish, with yellowish white pile.

Terminalia (Text-figs 299–305). Epandrium and gonocoxites mainly greyish tomentose and



Figs 299–305. Male terminalia of *Irwiniella semiargentea.* 299, genitalia in lateral view; 300, right gonocoxite in intero-ventral view; 301, aedeagus in lateral view; 302, aedeagus in dorsal view; 303, epandrium in dorsal view; 304, tergite 8; 305, sternite 8. Scale: 0·5 mm.

with blackish pile. Epandrium as in Text-fig. 303. Distal end of dorsal gonocoxal process comparatively short. Stylus and ventral lobe (Text-fig. 300) short and narrow. Phallus in lateral view (Text-fig. 301) short and strongly curved; in dorsal view (Téxt-fig. 302) broad proximally and narrowing rapidly. Dorsal apodeme (Text-fig. 301) almost straight, rectangular in dorsal view (Text-fig. 302). Tergite 8: Text-fig. 304. Sternite 8: Text-fig. 305.

Total length 6·0–7·4 mm.

♀. The specimens at hand are all in poor condition, for which reason it is impossible to give a full description.

Head. Frons without any distinct pattern as in other species, but uniformly dark brownish tomentose. Small areas of a deeper brownish colour may occur on lateral parts. Frons with sparse black pile. Rest of head with paler greyish brown tomentum. Antennae as in male.

Thorax. As in male, but the pile on prosternum, propleura and fore coxae may be darker than in male.

Wings and *legs* as in male.

Abdomen. Tergites 2–4 apparently mainly brownish black and shining, and only narrowly greyish tomentose along posterior margin except at middle. The following tergites more greyish tomentose. Pile mainly black.

Total length 7·0–8·6 mm.

Remarks. Kröber probably described this species from a single male specimen from 'Kap Verdische Inseln', but without specifying which particular island. The date was given as 'IX'. The type is in the Genoa Museum, but I was unable to borrow it because of the museum's regulations. Although it became clear during the work on the material collected in 1954 by Lindberg and Panelius that more than one species occurs on the Cape Verde Is., there seems little doubt that the specimens described here are conspecific with the holotype. See also discussion on p. 254.

Material examined.

Cape Verde Is.: São Tiago, Lagoa, 1 ♂, 15.ii.1954 (*Lindberg*) (ZMH); São Tiago, Praia, 2 ♂, 1 ♀, 5–14.ii.1954 (*Panelius*) (ZMH); Antão, supra Porto Novo, 1 ♀, 3.i.1954 (*Lindberg*) (ZMH).

Irwiniella lindbergi sp. n.

(Text-figs 203, 306–312)

Diagnosis. ♂. Similar to *semiargentea*, but frons bare, first and third antennal segments shorter (Text-fig. 203), and wings more whitish hyaline with dark brownish stigma and veins.

♀. Known only from teneral specimen in bad condition.

Description. ♂. *Head* (Text-fig. 203). Facial index 0·80. Eyes practically touching for a short distance. Proboscis broken. Palpi brownish grey with long black pile. All parts of head whitish grey tomentose, upper part of frons only indistinctly darkened. Frons and face bare. Genae with a darker appearance and with black hairs. Lower occiput as usual with long whitish pile. Post-ocular and occipital setae fewer in number than in *semiargentea*, only about 12 on each side; the upper post-oculars long. Antennae with first and third segments shorter than in *semiargentea*. Their colour blackish, with slight greyish tomentum. First segment with long black pile, but not as long as in *semiargentea*. Apical section of style about 3 times as long as basal section.

Thorax. Mesonotum discoloured but certainly almost as in *semiargentea*, though perhaps

more pale brownish grey striped. Pile shorter than in this species and consisting of both black and whitish hairs. Pleura and coxae pale greyish tomentose and with whitish pile. 1 pair of *dc* setae.

Wings. Cell M_3 closed. Vein R_4 forming a very narrow S in shape. Colour whitish hyaline with strong brownish veins and a blackish brown stigma. Halteres blackish brown.

Legs all lost.

Abdomen. Silvery whitish tomentose as in *semiargentea*, and with whitish pile.

Terminalia (Text-figs 306–312). Epandrium and gonocoxites with greyish tomentum, pile consisting of both pale and blackish hairs. Epandrium (Text-fig. 307) shorter than in *semiargentea*, and phallus (Text-fig. 310) tapering more gradually. Sternite 8 (Text-fig. 311) without an incision on posterior margin as in *semiargentea*.

Total length 5·8 mm.

♀. A single specimen with the same data as the holotype is teneral and in such bad condition that a meaningful description is impossible.

Remarks. See discussion on p. 254.

Material examined.

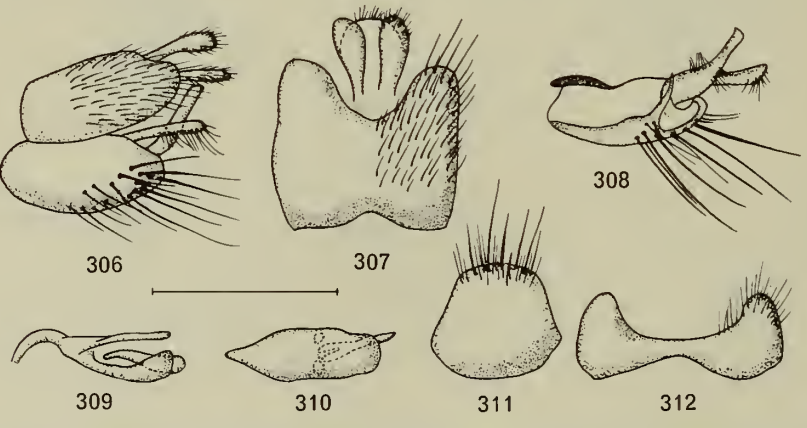
Holotype ♂, Cape Verde Is.: Boa Vista, Sal Rei, 29.i–1.ii.1954 (*Lindberg*) (ZMH).

Other material: 1 ♀ with same data as holotype, not a paratype (ZMH).

NEOPHYCUS Kröber

Neophycus Kröber, 1931 : 106. Type-species: *Neophycus antennatus* Kröber, 1931, by monotypy.

Description. *Head*. Face comparatively narrow and facial margins only slightly diverging from level of antennae down to level of bottom of eyes. Facial index about 0·47. Male eyes practically touching for a long distance and upper facets strongly enlarged. Lower frons protruding, forming an antennal socket. Genae short and narrow, forming a sharp ridge.



Figs 306–312. Male terminalia of *Irwiniella lindbergi*, holotype. 306, genitalia in lateral view; 307, epandrium in dorsal view; 308, right gonocoxite in intero-ventral view; 309, aedeagus in lateral view; 310, aedeagus in dorsal view; 311, sternite 8; 312, tergite 8. Scale: 0·5 mm.

Both frons and face bare. Proboscis stout, with large labella. Palpi vermiform and obviously one-segmented. Antennae very long, both first and third segments strongly elongate. Antennal pile short but dense.

Thorax. Mesonotum with 3 notopleural, 2 supraalar and 1 postalar setae; *dc* setae apparently absent. Scutellum with 4 rather short setae. Both mesonotum and scutellum comparatively long and narrow. Prosternum and sternopleuron haired on entire surface.

Wings. Long and slender, especially cell M_1 in particular appearing very long. Cell M_3 short petiolate. Vein R_4 moderately curved.

Legs long and slender. Cx_1 and cx_2 with long hairs on anterior and posterior surfaces. All femora with anteroventral setae, and tibiae with chaetotaxy as described for *Irwiniella*.

Abdomen rather slender and of nearly equal width throughout, almost entirely tomentose and short haired.

Male terminalia agreeing exactly with the description given under *Irwiniella*.

REMARKS. The genus is represented only by one species, which is known to the present author only from two specimens. *Neophycus* is clearly a derivate of the *Irwiniella*-complex of species. Apomorphic characters for the genus are the strongly elongate antennae, the long and slender wings and also the tendencies to elongation of the mesonotum, scutellum and abdomen.

Neophycus antennatus Kröber

(Text-figs 313–319)

Neophycus antennatus Kröber, 1931 : 106; Kröber, 1933 : 299. Holotype ♂, CAMEROUN (ZMB) [examined].

DIAGNOSIS. ♂. Easily distinguished from all other Ethiopian Therevinae, except for *Schoutedenomyia longeantennata*, by the very elongate antennae. Can be distinguished from *longeantennata* by the generic characters (see diagnostic key on pp. 197–198).

REDESCRIPTION. ♂. *Head*. Facial index about 0·47. The projecting lower frons with a large dull black area, greyish tomentose below. Face and occiput pale greyish tomentose. Occiput with whitish hairs, with about 10 strong post-ocular and occipital setae above. Palpi almost as long as proboscis, greyish brown, and with long whitish hairs. Antennae with first segment about 12 times as long as wide. Third segment including style about 10 times as long as wide at middle, the style itself consisting of two equal sections and a broad apical spine. Style about half as long as third segment proper. First segment blackish, but slightly brownish basally, and with moderately long, black pile. Second segment brownish. Third segment and its style pale yellowish, but third segment a little brownish basally.

Thorax. Mesonotum and scutellum blackish with thin greyish tomentum which does not form distinct pattern and with short adpressed pile. Pleura thinly greyish tomentose, with short whitish hairs.

Wings. Colour greyish hyaline; the area over discal cell brownish tinged. Veins and halteres brownish black.

Legs. F_1 and f_2 with 2–3 short *av* setae. F_3 with several short *av* setae in apical two-thirds. T_1 with rows of strong *ad*, *pd* and *pv* setae. T_2 and t_3 with the usual four rows of setae. Femora blackish with apices brownish. T_1 and t_3 as well as corresponding tarsi brownish black. T_2 and its tarsus paler brownish.

Abdomen. Tergites appearing mainly whitish grey tomentose, but tergite 4 and lateral parts of tergite 5 shining blackish. Sternites 1–3 whitish grey tomentose, following sternites more blackish. Abdominal pile short and consisting of both whitish and blackish hairs but on lateral margin of tergites 4–7 a long and tuffy pile which is black on tergites 4–5 and white on tergites 6–7.

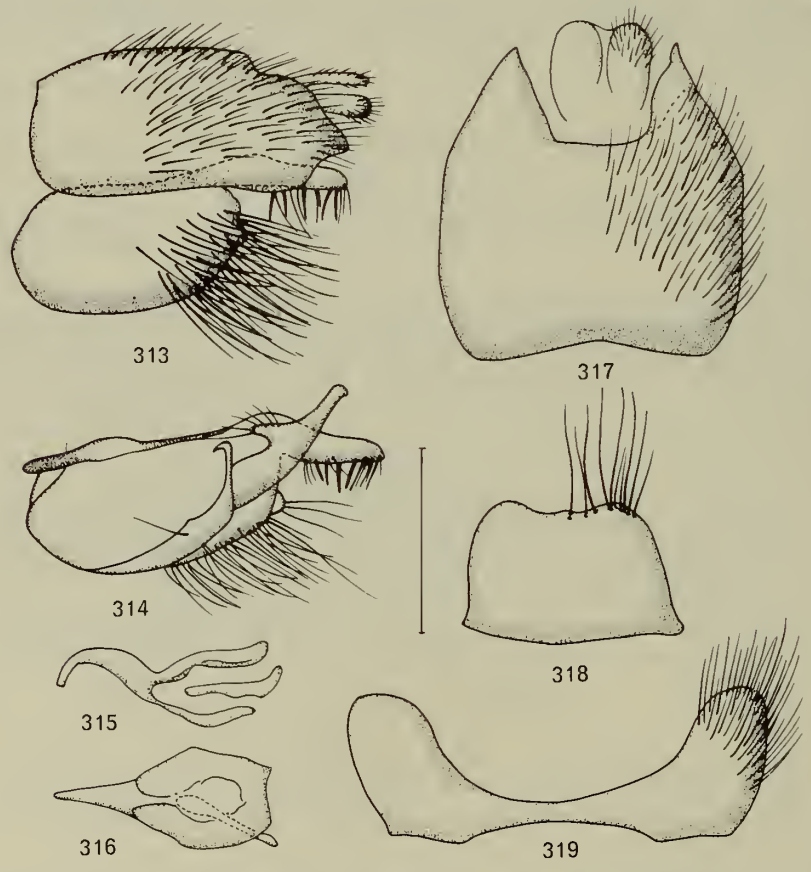
Terminalia (Text-figs 313–319). Blackish brown with blackish hairs. Epandrium (Text-fig. 317) rather bulbous and with pointed posterior corners. Paraproct weakly sclerotized and continuing into the intersegmental membrane. Gonocoxite (Text-fig. 313) with a small tubercle on posterior margin. Distal end of dorsal gonocoxal process strong, reaching to level of posterior margin of epandrium. Stylus (Text-fig. 314) long and slender, with a strong hook at middle. Ventral lobe rather long and narrow. Phallus in lateral view (Text-fig. 315) with proximal part almost straight, its apex strongly downcurved. Phallus narrow in dorsal view (Text-fig. 316). Dorsal apodeme (Text-figs 315) slightly upcurved, nearly hexagonal in dorsal view. Tergite 8: Text-fig. 319. Sternite 8: Text-fig. 318.

Total length 10·6 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, CAMEROUN: Uam district, near Bosum, 26.vi.1914 (*G. Tessmann*)



FIGS 313–319. Male terminalia of *Neophycus antennatus*, holotype. 313, genitalia in lateral view; 314, right gonocoxite in intero-ventral view; 315, aedeagus in lateral view; 316, aedeagus in dorsal view; 317, epandrium in dorsal view; 318, sternite 8; 319, tergite 8. Scale: 0·5 mm.

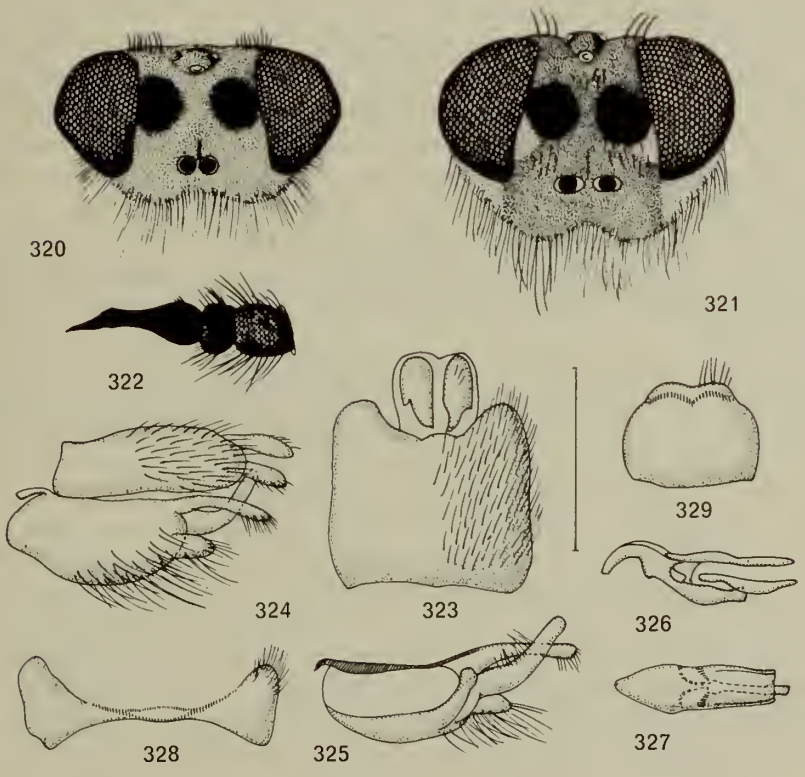
(ZMB). The holotype is not in good condition, as the head, thorax and abdomen are crushed and deformed. The specimen is also slightly mouldy.

NIGERIA: Ibadan, 1 ♂, I.v.1929 (*F. D. Golding*) (BMNH).

NEOTHEREVA Kröber

Neothereva Kröber, 1912 : 138. Type-species: *Thereva citrina* Becker, 1902, by PRESENT DESIGNATION.

DESCRIPTION. *Head* (Text-figs 320–322). Male eyes nearly touching for a short distance or separated by as much as twice the width of anterior ocellus. Facial indices vary from 0·75 to 0·93. Female eyes widely separated on frons, which is nearly square-shaped and has two circular areas of a velvety black or dark brown tomentum. Antennae inserted near level of



FIGS 320–329. *Neothereva*. 320, head of *N. citrina*, ♀ holotype; 321, head of *N. arenaria*, ♀ paratype; 322, antenna of *N. arenaria*, ♂ holotype; 323–329, male terminalia of *N. arenaria*, ♂ holotype; 323, epandrium, 324, genitalia in lateral view; 325, right gonocoxite in intero-ventral view; 326, aedeagus in lateral view; 327, aedeagus in dorsal view; 328, tergite 8; 329, sternite 8. Scale: 0·5 mm.

bottom of eyes. Frons with a sparse pile of stiff, black hairs, especially in female. Face bare. Genae and occiput with dense pubescence of soft whitish hairs. Post-ocular setae few and short. Occipital setae absent. Proboscis short, not reaching level of antennal bases. Palpi one-segmented, vermiform, as long as proboscis. Antennae simple. Eye-facets of nearly equal size.

Thorax. Mesonotum with 3 notopleural, 1–2 supraalar and 1 postalar setae. 0–2 pairs of dorsocentral setae. Scutellum with 4 strong setae. Prosternum with hairs on whole surface. Sternopleuron without pile on posterior part.

Wings. Cell M_3 short petiolate. Cell R_5 rather wide towards apex, 1·6–2·3 times as long as wide between tips of veins R_4 and R_5.

Legs. Cx_1 shorter than usual in the subfamily, anteriorly with long pale hairs, but without real setae. Cx_1 and cx_2 posteriorily with pale hairs. F_1 and f_2 without anteroventral setae; f_3 with a few anteroventral setae. T_1 with ca 3 anterodorsal and posterodorsal setae, but usually only 1–2 posteroventral setae. T_2 with 3–4 anterodorsal and posterodorsal setae, 1–2 anteroventral and posteroventral setae. T_3 with several setae in all four positions, but posteroventral setae few and short.

Abdomen. Usually entirely tomented in male, in female with indistinct pattern. Pile exclusively whitish.

Male terminalia. These follow the ground-plan as described for *Irwiniella* (see p. 253).

Remarks. The original diagnosis reads: 'Sehr ahnlich *Thereva*, aber dadurch unterschieden, dass beim ♂ die Augen durch die Breite der Ocellen getrennt sind. Körperbau wie bei *Thereva*, desgleichen Fühler und Flügel. Vierte Hinterrandzelle geschlossen, oft lang gestielt. Kleine Arten von 6,5 bis 9,5 mm'. It will be seen that the only diagnostic character given was the comparatively wide separation of the male eyes.

Kröber originally included in this genus five species: *N. nitidifrons* Kröber (♂, Budapest), *N. angustifrons* Kröber (♂, Egypt), *N. latifrons* (Macquart), *N. citrina* (Becker), and *N. frontata* Kröber (♂, Europe); all except *citrina* and *latifrons* were described as new.

N. nitidifrons is unknown to the present writer and the type (formerly in the Budapest Museum) is now lost. *Thereva latifrons* Macquart (1848 : 31) was described as a male, but Becker (1922 : 33) was of the opinion that Macquart's species in fact was described on the basis of a female specimen. Its inclusion in *Neothereva* cannot be accepted, as the identity of Macquart's species is completely unclear.

About the fifth included species, viz., *frontata*, it can be stated that according to the type, a male from 'Europa' in the Vienna Museum, this species is conspecific with *Thereva vulpina* Kröber (1912 : 696) which is very closely related to *Thereva bipunctata* Meigen. A more or less distinct secondary separation of the eyes occurs often in *bipunctata*, mainly in populations in coastal areas, and such forms were described as *Neothereva hermaphrodita* by Becker (1922 : 33) on the basis of material from Bornholm and from near Bordeaux. The species just mentioned are not congeneric with *citrina*, but belong in the genus *Thereva*.

Of the two remaining of the originally included species, *angustifrons* is conspecific with *citrina*. I therefore designate the fourth of the originally included species, viz. *citrina* Becker, as the type-species of *Neothereva* Kröber.

The nomenclatural changes that follow from these considerations are set out formally below.

Thereva frontata (Kröber) **comb. n.**

Neothereva frontata Kröber, 1912 : 140. Holotype ♂, 'Europa' (NMW) [examined].
Thereva vulpina Kröber, 1912 : 696. Lectotype ♂, Austria (NMW) [examined]. **Syn. n.**

Thereva bipunctata Meigen

Thereva bipunctata Meigen, 1820 : 121. 2 ♀ syntypes, locality and depository unknown.
Neothereva hermaphrodita Becker, 1922 : 33. Lectotype ♀, Denmark: Bornholm (ZMB) [examined]. **Syn. n.**

Neothereva citrina (Becker)

Thereva citrina Becker, 1902 : 35. Lectotype ♂, Egypt (ZMB) [examined].
Neothereva angustifrons Kröber, 1912 : 139. Holotype ♂, Egypt (ZMB) [examined]. **Syn. n.**

The genus *Neothereva* is widely distributed in the Saharan area from Israel and Egypt westwards towards the Atlantic coast of Mauritania. A couple of undescribed species are at hand from the Palaearctic part of that area apart from the type-species, *citrina*, which occurs in Israel and Egypt. It is an interesting fact that the genus is also represented on the southern hemisphere, namely on the coast of South West Africa. The phylogenetic relationships of the genus seem unclear.

Key to Ethiopian species of *NEOTHEREVA* Kröber

(Male of *N. macularis* is unknown)

1 All setae of head, mesonotum and legs pale. Cell R_4 long, about 2·0–2·3 times as long as wide. First antennal segment about twice as long as wide. Male eyes certainly well-separated . . . . . ***macularis*** (p. 294)
– All setae of head, mesonotum and legs black. Cell R_4 shorter, about 1·6 times as long as wide. First antennal segment about as long as wide (Text-fig. 322). Male eyes practically touching . . . . . ***arenaria*** (p. 293)

***Neothereva arenaria* sp. n.**

(Text-figs 321–329)

Diagnosis. ♂ ♀. All setae black. Frons with golden tomentum. Face about three-fourths as broad as height of head. Cell R_5 only about 1·6 times as long as wide at apex.

Description. ♂. *Head* (Text-fig. 322). Facial index ca 0·75. Eyes nearly touching for a short distance. Upper frons black. Lower frons and face with golden tomentum, becoming pure greyish on lower frons and on genae and occiput. Some hairs laterally on lower frons. Face bare. Genae and occiput with dense white pile. 1–3 short and weak post-ocular setae present. Occipital setae absent. Antennae blackish, first segment slightly tomentose; style rather long.

Thorax. Mesonotum greyish brown tomentose, with three darker brownish bands which are ill-defined and disjointed. Mesonotal pile whitish and rather long. 1–2 pairs of *dc* setae present. Only 1 *sa* seta present. Scutellum brown with whitish pile. Pleura greyish with whitish pile.

Wings. Vein R_4 nearly straight, only bent close to fork of R_{4+5} and near its tip. Ground colour whitish hyaline. Veins partly pale yellowish, partly blackish. Infuscations of dark

microtrichia occur around cross-veins, around tips of cell M_3 and anal cell, tip of vein R_{2+3} and on stigma. Halteres pale yellowish.

Legs. Colour yellowish; apex of tibiae and last tarsal segments may be slightly darkened.

Abdomen. This is greyish tomentose all-over, but posterior tergites may be distinctly yellowish brown translucent. Pile dense and exclusively whitish.

Terminalia (Text-figs 323–329). Entirely yellowish brown and with whitish pile. Epandrium as in Text-fig. 323. Stylus shaped as shown in Text-fig. 325. Ventral lobe long and narrow. Posterior margin of gonocoxite (Text-fig. 324) with a well-marked projection. Distal end of dorsal gonocoxal process strongly overhangs posterior margin of epandrium. Phallic part of aedeagus (Text-fig. 326) strong and strongly curved in lateral view; in dorsal view (Text-fig. 327) slightly wider proximally than proximal part of dorsal apodeme. Tergite 8: Text-fig. 328. Sternite 8: Text-fig. 329.

Total length about 6·2–6·6 mm.

♀. *Head* (Text-fig. 321). Facial index ca 0·85. Frons and face largely golden brownish tomentose. On frons two large areas of a deep velvety black colouration, and areas below these spots silvery tomented close to eye-margin. Black spots with dense pile of short coarse hairs. Pile of genae and occiput not whitish as in male, but more yellowish brown.

Thorax, wings and *legs*. Almost as in male, but wing more distinctly spotted, and also thoracic pile darker than in male.

Abdomen. All tergites pale brownish, darker on anterior middle parts of first tergites. Posterior tergites with sparse greyish tomentum. Pile short, pale and rather sparse. 7 + 7 terminal spines on ovipositor. The spines are slightly spatulate apically.

Total length 7·0–7·5 mm.

Material examined.

Holotype ♂, South West Africa: Swakopmund, 26–30.i.1972 (BMNH).

Paratypes. South West Africa: same data as holotype, 1 ♂ (BMNH); Swakop River Mouth, 8 m, coastal and riverbed dunes, 56 ♂, 10 ♀, 9.ii.1974 (*M. E. & B. J. Irwin, L. Lyneborg*) (NM & ZMC); Lüderitz, Agate Beach, 3 m, low coastal vegetated dunes, 6 ♂, 1 ♀, 18.ii.1974 (*M. E. & B. J. Irwin, L. Lyneborg*) (NM & ZMC).

Neothereva macularis (Wiedemann) **comb. n.**

Thereva macularis Wiedemann, 1828 : 558. Holotype ♀, ?Sudan 'Nubia' (SMF) [examined].

Diagnosis. ♂. Unknown.

♀. All setae pale. Frons greyish tomentose. Face broader than in *arenaria*, and cell R_5 longer and narrower than in this species.

Description. ♀. *Head*. Facial index ca 0·93. Head totally greyish tomentose, on frons with two roundish velvety black areas (cf. Text-fig. 320). Frons and face practically bare. Genae and occiput with a dense whitish pile. About 5 pale post-ocular setae on each side. Occipital setae not distinct. First and second antennal segments pale greyish brown with short pale pile. Third segment lost in both specimens available.

Thorax. Mesonotum greyish with three indistinct and interrupted greyish black bands. Pile and setae all pale. Chaetotaxy cannot be stated.

Wings. Cell R_4 distinctly longer and narrower than in *arenaria*, its index about 2·0–2·3. Ground colour whitish hyaline, wing much less spotted than in *arenaria*, spots being restricted to surroundings of cross-veins and tips of veins R_{2+3} and R_4.

Legs. Chaetotaxy as described for the genus. Colour exclusively yellowish, with pale hairing and setae.

Abdomen. Brownish and without definite pattern, only with paler hind marginal seams. Abdominal pile pale.

Total length 7·6–8·5 mm.

MATERIAL EXAMINED.

Holotype ♀ of *macularis*,? SUDAN, labelled as 'Abyssinia, Dr. Rüppell', type-locality stated by Wiedemann as 'Aegypten'.

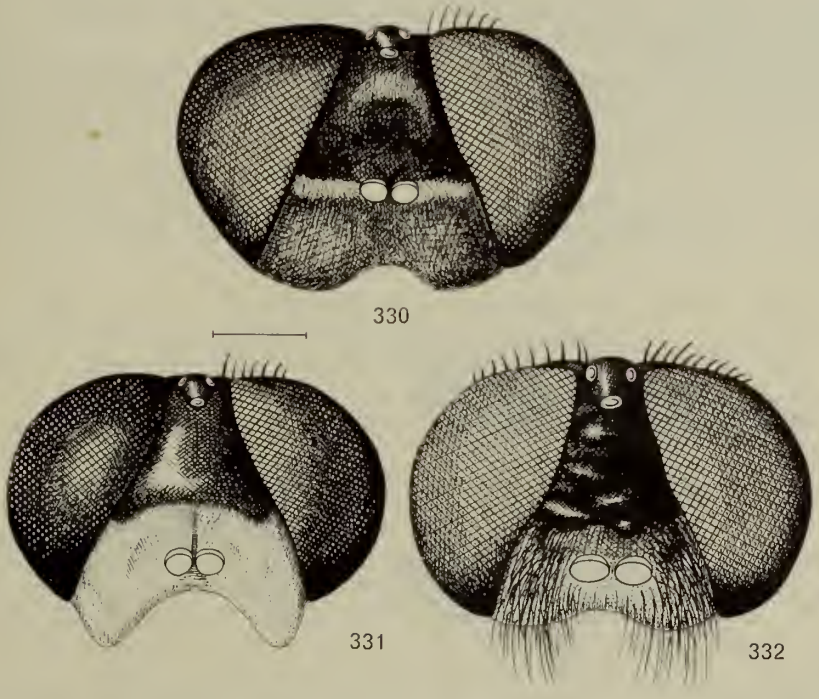
MAURITANIA: Nouakshott, 1 ♀, 17–21.x.1948 (*L. Berland & A. Villiers*) (IFAN).

PSEUDOTHEREVA gen. n.

Gender: feminine.

Type-species: *Thereva aethiopica* Bezzi, 1906.

DESCRIPTION. *Head* (Text-figs 330–332). Face moderately broadened. Facial indices varying between 0·84 and 0·98, i.e. distance across face between lower corner of eyes is 84 to 98 per cent of height of head, only overlapping with *Irwiniella* in the female of *I. natalensis* (head index 0·87), while *Thereva* has facial indices varying between 0·94 and 1·27. Male eyes touching on frons. Female frons rather broad and predominantly shining blackish, at most paler tomentose on lower part, the shining part not forming a distinct demarcated callus as in



FIGS 330–332. *Pseudothereva*, female heads in frontal view. 330, *Ps. unifasciata*, holotype; 331, *Ps. aethiopica*; 332, *Ps. parviseta*. Scale: 0·5 mm.

Thereva s. str. Both frons and face with distinct pile. Genae rather broad, evenly curved and with long pile. Antennae (Text-figs 333–335) long and slender, first segment with long pile; style varying in length, but usually long. Proboscis and palpi as in *Irwiniella*.

Thorax as described for *Irwiniella*, but the female of *parviseta* with very sparse pile on sternopleuron.

Wings with cell M_3 open in *parviseta*, short-petiolate in the other species.

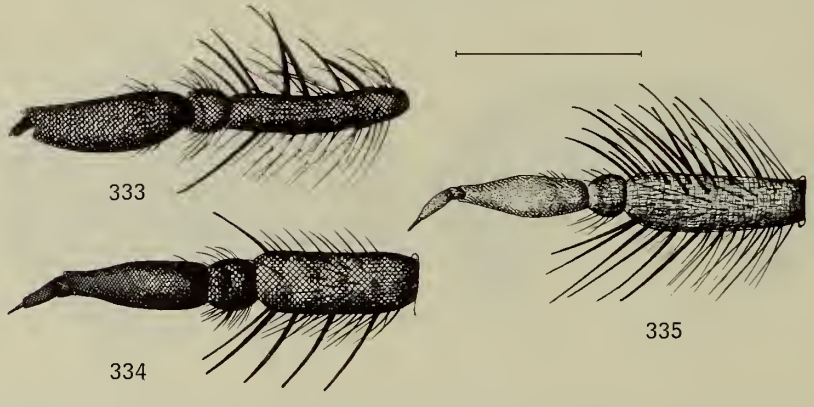
Legs. Cx_1 and cx_2 with hairs on anterior and posterior surfaces as in *Irwiniella*, and femoral and tibial chaetotaxy also as in this genus. However, in *parviseta* the *pd* setae of t_1 may be absent, a very unusual character in this part of the family.

Abdomen. Male abdomen either entirely tomentose or with distinct blackish anterior bands on first tergites. Female abdomen largely black and shining, always with small posterolateral bands of greyish tomentum on tergite 2, sometimes also on the following tergites.

Male terminalia. Epandrium relatively broad and deeply incised on posterior margin. Paraproct in the type-species not continuing into a sclerotization of the intersegmental membrane, in *parviseta* (Text-fig. 345) fused with a distinct narrow sclerotization on this membrane. Distal end of dorsal gonocoxal process not as long and straight as in *Irwiniella*, but more down-curved from near its base, very enlarged in the type-species, much more slender in *parviseta*. Stylus large, and ventral lobe short and broad. Hypandrium relatively large. Aedeagus with a strongly curved phallus which is rather long. Dorsal apodeme very broad, with lateral out-shoots in the type-species. Ventral apodeme large and trough-shaped.

Remarks. The genus is represented by four species in the Ethiopian region, but the male sex of only two species is known. Three of the species, viz. *aethiopica*, *kijabea* and *unifasciata*, form an obvious monophyletic group, whereas *parviseta* may later deserve to be placed in a genus of its own because it possesses special apomorphic characters, in particular the reduction of the *pd* setae of t_1. The geographical distribution also supports this separation.

The genus *Pseudothereva* is certainly a derivate, having its origin in the *Irwiniella*-complex of species. Compared with *Irwiniella* it shows further anagenetic progress in the flattening of the head, giving rise to facial indices, which have values intermediate between *Irwiniella* and *Thereva*. A further apomorphic character in comparison with *Irwiniella* is the presence of pile on the face. *Thereva* certainly represents a different line of evolution from *Pseudothereva*. This genus also has a



Figs 333–335. *Pseudothereva*, antennae. 333, *Ps. unifasciata*, ♂ holotype; 334, *Ps. aethiopica*, ♀; 335, *Ps. parviseta*, ♂ holotype. Scale: 0·5 mm.

hairy face, but the flattening of the head has progressed further so that the facial index of *Thereva* has values near or over 1·00, i.e. the facial width between lower corners of eyes is equal to or larger than head-height.

Key to Species of *PSEUDOTHEREVA*

Males

(Unknown in *kijabea* and *unifasciata*)

1 Abdomen entirely silvery greyish tomentose. Only 5–6 post-ocular setae. Cell M_3 short-petiolate. T_1 with distinct *pd* setae . . . . ***aethiopica*** (p. 297)
– Abdomen with shining blackish anterior bands on tergites 2–4. Numerous post-ocular setae. Cell M_3 open. T_1 without distinct *pd* setae . ***parviseta*** (p. 301)

Females

1 Frons (Text-fig. 330) uniformly subshining blackish all over. Antennal style (Text-fig. 333) very short. Tergites 2–4 entirely glossy black . . ***unifasciata*** (p. 300)
– Frons distinctly greyish tomentose on lower part. Antennal style (Text-figs 334, 335) much longer. At least tergite 3 with small tomentose areas on postero-lateral corners 2
2 Face with very long pile, the hairs comparable in length to length of first antennal segment. Tergites 4–7 entirely glossy black . . . . ***parviseta*** (p. 301)
– Face with pile much shorter than length of first antennal segment. At least some of tergites 4–7 greyish tomentose laterally 3
3 Proboscis reaching to level of antennal bases. Whitish grey stripes separating dark mesonotal bands rather narrow and indistinctly demarcated. Tergite 7 with lateral areas of silvery greyish tomentum. . . . . ***aethiopica*** (p. 297)
– Proboscis not reaching to level of antennal bases. Whitish grey stripes separating dark mesonotal bands broad and very distinctly demarcated. Tergite 7 entirely black . . . . . ***kijabea*** (p. 300)

Pseudothereva aethiopica (Bezzi) **comb. n.**

(Text-figs 331, 334, 336–342)

Thereva aethiopica Bezzi, 1906 : 264; Kröber, 1912 : 405; Kröber, 1925 : 11; Kröber, 1931 : 133.
LECTOTYPE ♂, Ethiopia (MCM), here designated [examined].
Psilocephala aethiopica (Bezzi) Kröber, 1912 : 136; Kröber, 1925 : 29; Kröber, 1931 : 127.

Diagnosis. ♂. Genae with whitish hairs. 5–6 post-ocular setae. Mesonotum with three brownish black bands separated by distinct pale greyish stripes. Abdomen silvery whitish tomentose.

♀. Short black hairs on face. Upper two-thirds or more of frons black and distinctly shining, lower third tomentose. Abdomen glossy black with sharply limited silvery greyish tomentose areas on postero-lateral corners of tergites 2–7.

Redescription. ♂. *Head.* Facial index not known. Eyes touching. Proboscis reaching well beyond level of antennal bases. Palpi shorter than proboscis, blackish, with whitish hairs. Head discoloured in the only specimen available, but certainly entirely covered with whitish grey tomentum. Frons and face covered with long, blackish hairs. Genae and occiput with long whitish pile. Only 5–6 post-ocular setae on each side, and a similar number of occipital setae. First and second antennal segments blackish, with long blackish pile; third segment lost.

Thorax. The mesonotal pattern is difficult to describe due to discoloration, but apparently

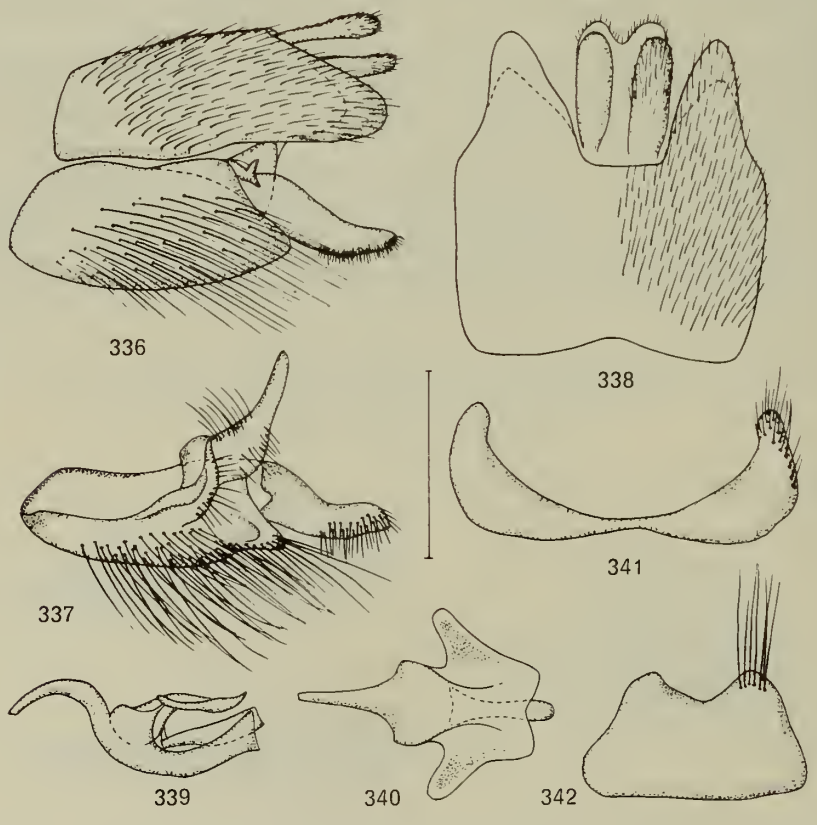
there are three brownish black bands, separated by paler stripes. Mesonotal pile consisting of long blackish hairs (length about 0·10 mm) and shorter pale hairs. Scutellum mainly tomentose, with long pale hairs. Pleura greyish tomentose with pale hairs. Only 1 *sa* setae on each side. *Dc* setae absent.

Wings. Cell M_3 short-petiolate. Vein R_4 strongly S-curved, and cell R_4 thus very wide. Colour greyish brown. Stigma pale brownish and veins dark brownish. Halteres with blackish knob.

Legs. F_1 and f_2 with 1 long *av* seta. F_3 with a row of long *av* setae and with much shorter, spiny *pv* setae. T_1 with some *ad*, *pd* and *pv* setae, the a*d* and *pd* restricted to basal half. T_2 and t_3 with the usual four rows of setae. Coxae greyish. Femora blackish with greyish tomentum, especially on the ventral surfaces. Femoral pile pale and long. Tibiae yellowish brown, darkened at tips, especially on t_1. Tarsi blackish brown.

Abdomen. Tergites silvery greyish tomentose, tergite 1 and anterior part of tergite 2 less distinctly so. Hind-marginal seams whitish yellow and distinct on the first six tergites. Sternites greyish black, darkest in the middle, distinctly tomentose laterally. Pile long and whitish.

Terminalia (Text-figs 336–342). Epandrium greyish tomentose, but yellowish brown



Figs 336–342. Male terminalia of *Pseudothereva aethiopica*, lectotype. 336, genitalia in lateral view; 337, right gonocoxite in intero-ventral view; 338, epandrium in dorsal view; 339, aedeagus in lateral view; 340, aedeagus in dorsal view; 341, tergite 8; 342, sternite 8. Scale: 0·5 mm.

posteriorly, with short hairs only. Gonocoxites greyish black and mainly with long blackish hairs. Epandrium as in Text-fig. 338. Distal end of dorsal gonocoxal process very long and broad (Text-fig. 336), down-curved and with tip reaching beyond level of epandrium; bearing a dentate projection proximally. Stylus (Text-fig. 337) very long, apical part straight and narrow. Ventral lobe small, curved and with hairs which is an unusual feature. Phallic part of aedeagus (Text-fig. 339) strongly upcurved, then gradually down-curved; in dorsal view (Text-fig. 340) abruptly narrowing proximally. Dorsal apodeme flat and with two lateral off-shoots. Tergite 8: Text-fig. 341. Sternite 8: Text-fig. 342.

Total length 9·0 mm.

♀. *Head* (Text-figs 331, 334). Facial index 0·84. Most of frons black, with a brownish tinge laterally, shining but not glossy. On middle the frons gradually becomes more dulled by tomentum below, while the lateral areas of lower frons are whitish grey tomentose as are the face, genae and occiput; the latter subshining on upper part. Upper part of frons with short black hairs, middle part bare, and lower part with lateral groups of short black hairs which continue downwards on face to level of bottom of eye. Remainder as in male. Antennae entirely black.

Thorax. Mesonotal pattern consisting of three broad blackish brown bands separated by very distinct whitish grey stripes. Lateral areas of mesonotum also pale greyish. Remainder as in male, but mesopleuron subshining. One pair of *dc* setae present.

Wings. Cell M_3 closed at wing-margin in one specimen, narrowly open in the other specimen. Vein R_4 and cell R_4 as in male. Colour greyish brown as in male, but with distinct darker brownish shadows along the longitudinal veins. Veins and halteres blackish brown.

Legs. F_1 with 1 strong *av* seta. F_2 with 2 strong *av* setae. Remainder as in male.

Abdomen. Tergites mainly deep black and glossy. Posterior margins of tergites 2–3 with sharply marked bands of silvery greyish tomentum. Laterally these tomentose bands occupy about one-third of total tergal length; they decrease gradually in width towards the mid-line where they occupy about one-third of tergal length. Tergite 4 with a small area of similar tomentum on postero-lateral corners. Lateral parts of tergites 5–7 with larger areas of silvery greyish tomentum, these tomentose bands diverging from tergal hind-margins. Pile short and sparse, pale on most of tergites 1–3, black on the rest. Sternites blackish, and posterior corners of sternites 2–4 tomentose. Pile as on tergites. Terminal spines broad and blunt-tipped.

Total length 9·5–10·2 mm.

Remarks. Bezzi described both sexes of this species from material from 'Dintorno di Adi Caiè' in the Eritrea Province of Ethiopia. Only one male specimen is present in his collection in the Milan Museum. It is labelled '289', 'Adi Caiè, viii. 1902 Eritrea', and 'Thereva aethiopica, type, Bezzi'. The specimen agrees well with Bezzi's description and is hereby designated lectotype. It has lost both third antennal segments, right p_2, and left p_3, and some tarsal segments from the remaining legs are also missing. The author has not been able to locate female specimens identified by Bezzi as *aethiopica*.

Kröber (1912), probably without having seen Bezzi's material, recorded the male as *Thereva aethiopica* Bezzi and the female as *Psilocephala aethiopica* Bezzi, apparently because he took the two sexes of Bezzi's species as representing two generically distinct species. Apart from the fact that the same name cannot be used in two different combinations, he was also apparently wrong in not accepting the male and female described by Bezzi as conspecific.

Distribution. So far known only from a small area near Asmara in the mountains of northern Ethiopia.

Material examined.

Lectotype ♂, Ethiopia: Eritrea, Adi Caiè, viii. 1902 (*Andreini*) (MCM).

Ethiopia: Eritrea, Asmara, 1 ♀, 29.ix.1960 (*D. J. Greathead*) (DJG); Eritrea, Hamasien, 1 ♀, 15.x.1957 (*D. J. Greathead*) (DJG).

Pseudothereva kijabea (Séguy) comb. n.

Psilocephala kijabea Séguy, 1938 : 334. Holotype ♀, Kenya (MP) [examined].
Thereva nitidiventris Kröber, 1939 : 395. Holotype ♀, Kenya (BMNH) [examined]. **Syn. n.**

Diagnosis and redescription. Only ♀ known; very similar to *aethiopica* described above.

Head with the proboscis distinctly shorter than in *aethiopica*, not reaching to level of antennal bases. Palpi almost as long as proboscis. The blackish frontal area more glossy than in *aethiopica*.

Thorax with the same very striking mesonotal pattern consisting of three brownish black longitudinal bands separated by two broad whitish grey stripes, *Dc* setae absent. 1–2 *sa* setae.

Wings and *legs* practically as in *aethiopica*.

Abdomen. Posterior margins of tergites 2–3 with much narrower bands of whitish grey tomentum than in *aethiopica*, occupying less than one-sixth of tergal length. Tergite 4 without tomentum on postero-lateral corners. Tergites 5–6 with lateral areas of tomentum, and tergites 7–8 entirely glossy black.

Total length 9·6–10·3 mm.

Remarks. Séguy described his *kijabea* from a single female specimen from 'Kenya: Kijabé, Kikuyu, 2100 m'. The following year Kröber described *nitidiventris*, probably also from one female specimen, from 'Kenya: Naivasha, vii. 1937 (H. J. A. Turner)'. Both species come from the highlands within 60 km NW. of Nairobi and are evidently conspecific.

Material examined.

Holotype ♀ of *kijabea*, Kenya: Kijabé, Kikuyu, 2100 m, 1932–33 (*C. Arambourg, P. A. Chappuis & R. Jeannel*) (MP). Holotype ♀ of *nitidiventris*, Kenya: Naivasha, vii.1937 (*H. J. A. Turner*) (BMNH).

Kenya: Naivasha, 1 ♀, iv. 1937, 2 ♀, iv.1940 (*H. J. A. Turner*) (BMNH & ZMC).

Pseudothereva unifasciata (Kröber) comb. n.

(Text-figs 330, 333)

Thereva unifasciata Kröber, 1913 : 62; Kröber, 1931 : 133. Holotype ♀, Ethiopia (ZMB) [examined].

Diagnosis. ♀. Face rather short-haired as in *aethiopica* and *kijabea* but frons entirely subshiny blackish, not distinctly tomentose on lower part, and only tergites 2 and 5 with small areas of greyish tomentum.

♂. Unknown.

Redescription. ♀. *Head* (Text-figs 330, 333). Facial index 0·90. Frons widening strongly below, transversely wrinkled and depressed above. Colour uniformly black and subshining, i.e. with thin whitish grey tomentum. From antennal level down on to face the tomentum is thicker whitish grey. Pile of frons and face black, but whitish hairs present on middle of face. Occiput whitish grey tomentose and with short whitish pile. 6 rather short

post-ocular setae on each side. A few occipital setae below these. Proboscis reaching well beyond level of antennal bases. Palpi shorter than proboscis, dark brownish and with whitish and dark hairs. Antennae black, with grey tomentum. Pile on segment 1 rather short.

Thorax black and subshining, as are also the upper pleura because of rather thin greyish tomentum. Mesonotum with a dull blackish middle stripe. Mesonotal pile short and consisting of black and yellowish hairs. 2 *sa* setae on each side. *Dc* setae absent.

Wings. Cell M_3 short-petiolate. Vein R_4 with a straight proximal section, apical section forming a slightly deep curve. Colour uniformly greyish brown without any infuscation. Veins rather pale brownish. Halteres blackish brown.

Legs. F_1 with 2 weak *av* setae. F_2 without *av* setae. F_3 with 6 weak *av* setae. Tibiae with the usual rows of setae. Femora blackish with short pale hairs. Tibiae and metatarsi of p_2 and p_3 brownish yellow. Tips of tibiae and other tarsal segments blackish.

Abdomen. Tergites shining black, tergite 2 with a broad, whitish hind-marginal seam. Small areas of whitish grey tomentum laterally along posterior margin of tergite 2 and laterally on tergite 5. Sternites blackish with thin tomentum anteriorly. Abdominal pile short and sparse, erect and black on all sternites except sternites 1–2.

Total length 8·6 mm.

MATERIAL EXAMINED.

Holotype ♀, ETHIOPIA: 'Abyssinia', Ehrbg. (ZMB). It is not absolutely certain that the holotype comes from a locality within the present boundaries of Ethiopia.

Pseudothereva parviseta sp. n.

(Text-figs 332, 335, 343–350)

DIAGNOSIS. ♂. Easily distinguished from *aethiopica* by the following combination of characters: genae with brownish black hairs, numerous post-ocular setae, almost uniformly greyish black mesonotum, and distinctly banded abdomen.

♀. Face with very long pile. Only tergites 2–3 with small areas of greyish tomentum postero-laterally.

DESCRIPTION. ♂. *Head* (Text-fig. 335). Facial index 0·87. Proboscis reaching beyond level of antennal bases; labella large. Palpi long and slender, almost reaching tip of proboscis, greyish, with whitish pile. Upper corner of frons subshining brownish black and bare. Rest of frons and other parts of head whitish grey to silvery whitish tomentose. Pile of head very long, blackish on frons and lateral parts of face, whitish on middle of face, brownish black on genae, and whitish on occiput. Numerous long and hair-like post-ocular setae; about 30 on each side. Only a few occipital setae present below the post-ocular row. First and second antennal segments black with greyish tomentum. Third segment and style dirty brownish grey. First segment with long whitish hairs basally, in apical half with numerous stiff, black setae.

Thorax. Mesonotum greyish black, subshining, with two indistinct and narrow paler greyish stripes; lateral parts also paler greyish tomentose. Mesonotal pile long and consisting of both whitish and black hairs. Scutellum coloured like the mesonotum and with exclusively whitish pile. Pleura whitish grey with whitish pile. 1–2 *sa* setae present. *Dc* setae absent.

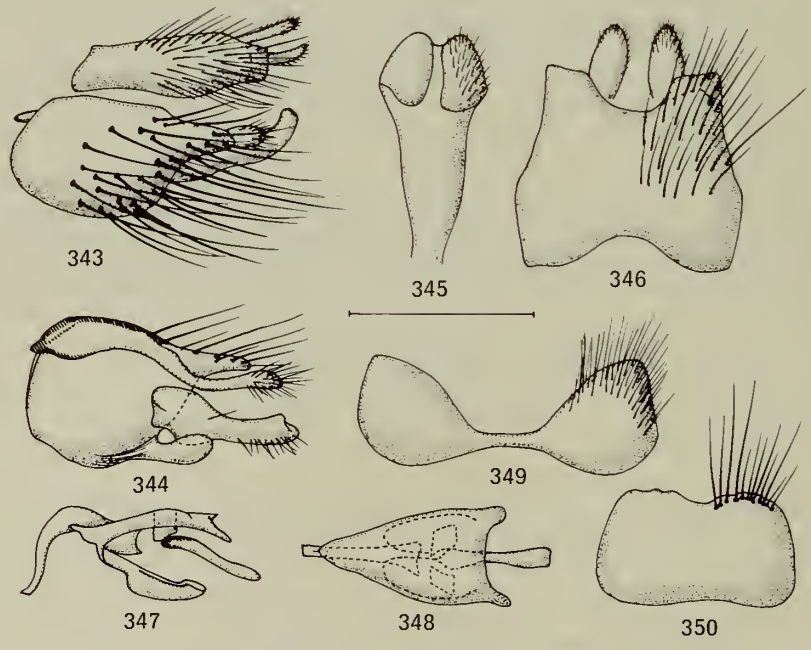
Wings. Cell M_3 rather broadly open. Vein R_4 with proximal section almost straight, apical section with a deep curve. Colour hyaline, with a greyish brown tinge. Veins and stigma brownish black. Clouding around cross-veins and fork of R_{4+5} totally absent. Knob of halteres brownish black.

Legs. F_1 and f_2 without *av* setae. F_3 with 4–5 *av* setae. T_1 with 3–5 *ad* and *pv* setae, but *pd* setae absent, a unique character. T_2 and t_3 with setae in all four positions: *ad*, *pd*, *av* and *pv*. Coxae whitish grey like the pleura. Femora brownish black, slightly yellowish brown at

extreme tip, only indistinctly tomentose, and with mainly whitish hairs. Tibiae and tarsi yellowish brown, tips of tibiae and last tarsal segments darkened.

Abdomen. Tergites 2–4 with shining blackish anterior bands, the rest of these tergites silvery whitish grey tomentose. Along the mid-line the blackish bands occupying about two-thirds of tergite 2, half of tergite 3, and one-fourth of tergite 4, but all bands narrow towards lateral margin. Tergites 5–7 entirely silvery whitish grey tomentose. Tergal pile very long, especially laterally, and whitish, except on the blackish bands, where the pile is shorter and blackish. Sternites brownish black, but anterior sternites whitish grey tomentose, especially on posterior parts. Sternal pile whitish.

Terminalia (Text-figs 343–350). Epandrium and gonocoxites brownish black and shining, with blackish pile. Epandrium as in Text-fig. 346. Paraproct continuing into a common sclerite (Text-fig. 345). Gonocoxite in lateral view (Text-fig. 343) with upper posterior margin strongly projecting. Distal end of dorsal gonocoxal process (Text-fig. 343) only slightly overhanging posterior projection on gonocoxite. It has a much lower position than usual and is thus hidden behind the gonocoxal projection in lateral view. Seen from inside (Text-fig. 344) the down-curved position of the dorsal gonocoxal process is distinctly visible. Stylus (Text-fig. 344) remarkably short and relatively wide. Ventral lobe formed as in Text-fig. 344. Phallus long and in lateral view (Text-fig. 347) abruptly curved for more than 90 degrees near its base, the tip itself being slightly upcurved. In dorsal view (Text-fig. 348) the phallus gradually decreasing in width towards tip; the ventral proximal part of the tube visible between the angle formed by the dorsal and ventral apodemes. Dorsal apodeme slightly curved, in dorsal view (Text-fig. 348) gradually increasing in width, distal margin with a broad emargination. Ventral



Figs 343–350. Male terminalia of *Pseudothereva parviseta*, holotype. 343, genitalia in lateral view; 344, right gonocoxite in interior view; 345, paraproct; 346, epandrium in dorsal view; 347, aedeagus in lateral view; 348, aedeagus in dorsal view; 349, tergite 8; 350, sternite 8. Scale: 0·5 mm.

apodeme shaped like a deep but narrow trough. Ejaculatory apodeme simple, with two additional small sclerites at its base. Tergite 8: Text-fig. 349. Sternite 8: Text-fig. 350.

♀. *Head* (Text-fig. 332). Facial index 0·93. Frons comparatively narrow above and gradually widening below, mainly shining blackish, only narrowly whitish grey tomentose above antennae. Rest of head whitish grey to grey tomentose. Pile coloured as in male, but shorter. Post-ocular setae fewer (about 10 on each side), and shorter but stronger. A similar number of occipital setae. Antennae as in male, but third segment sometimes darker. Otherwise as in male.

Thorax. Mesonotum coloured as in male, but the two pale greyish stripes slightly broader and more distinct. Pile short and consisting of pale and black hairs. Rest as in male. 2 + 2 *sa* setae. *Dc* setae absent.

Wings as described for male.

Legs apparently with the same chaetotaxy and colour as in the male. T_1 sometimes with a single small *pd* seta near middle.

Abdomen. Tergites practically entirely shining blackish, seen from above and laterally with ill-defined whitish grey tomentose bands along posterior margins of tergites. Abdominal pile short, with pale adpressed hairs dominating on tergites 2–3, but black erect hairs on the following tergites. 7 + 7 rather short, pointed spines.

Total length 8·6–10·0 mm.

MATERIAL EXAMINED.

Holotype ♂, SOUTH AFRICA: Natal, Maritzburg, 1913 (*C. Akerman*) (NM).

Paratypes. SOUTH AFRICA: Natal, Howick, 1 ♂, 1 ♀ (*C. P. Cregoe*) (BMNH); same locality, 1 ♂, Distant Coll. (BMNH); Natal, Winklerspruit, 1 ♀, v. 1917 (*C. Akerman*) (NM); Pondoland, Port St John, 1 ♀, 5–30.iv.1923 (*R. E. Turner*) (BMNH); same locality, 1 ♂, 10–22.ii.1955 (*A. J. T. Janse*) (TM).

THEREVA Latreille

Thereva Latreille, 1796 : 167. Type-species: *Musca plebeja* Linné, by subsequent monotypy (Latreille, 1802 : 441).

DESCRIPTION. *Head*. Male eyes touching, or nearly touching for a shorter or longer distance. Eye facets of equal or almost equal size. Face broad when compared with height of head, as facial margins are strongly divergent from level of antennae down to bottom of eyes. Facial indices varying between 0·94 and 1·27, i.e. distance between lower corner of eyes usually exceeding total height of head; only the male of *Thereva reclusa* has a lower facial index: 0·83. Female frons (Text-figs 351, 352, 357, 358, 361–364) always broad and with a pattern formed by differently coloured tomentum in the *analis*- and *turneri*-groups, while the frons in females of the *seminitida*-group has a shining black callus or two such calli. The gena is moderately deep in lateral view, and very wide in frontal view. Frons always haired, and face also haired. There is a great deal of interspecific variation in the number of post-ocular and occipital setae. Antennae simple, the relative lengths of first and third segments rather variable (cf. Text-figs 353–356, 359, 360, 365–369). Pile on first segment also varying in length. Style varying in length, two-segmented and with an apical spine. Proboscis usually normal, i.e. reaching as far as or slightly beyond level of antennal bases, but with tendencies towards reduction in a few species. Palpi one-segmented and vermiform.

Thorax. Mesonotum with 3–5 notopleural, 1–2 supraalar and 1 postalar setae. 0–2 pairs of dorsocentral setae. Scutellum with 4 strong setae. Prosternum with long hairs on whole surface. Sternopleuron with long hairs on most of its surface, even on the ventral and anterior parts.

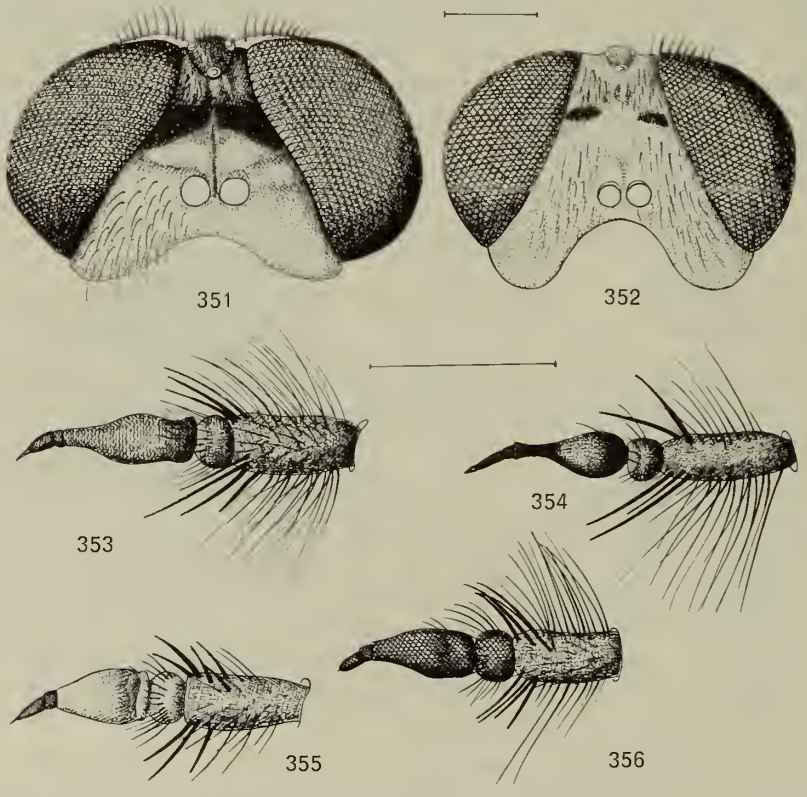
Wings. Cell M_3 open or closed. Cell R_4 wide towards apex, usually 1·6–2·2 times as long

as wide between tips of veins R_4 and R_5, only in *turneri*-group narrower: 2·4–2·6 times as long as wide.

Legs. Cx_1 and cx_2 with long hairs on anterior and posterior surfaces. Femora usually with anteroventral setae, or these are absent on f_1 and/or f_2 only. T_1 with anterodorsal, posterodorsal and posteroventral setae, and t_2 and t_3 with rows of setae in all four positions, i.e. anteroventral setae also present. All femoral and tibial setae comparatively long, usually longer than tibial diameter.

Abdomen. Rather more broadly built than in the previous genera, and more tapering. Pattern very variable, from entirely whitish grey tomentose to entirely polished black; very often banded.

Male terminalia. Epandrium always broader than long along the mid-line, and especially in the *seminitida*-group very constricted in middle. Paraproct in the *analis*-group very weak and not continuing into sclerotizations of the intersegmental membrane; in the *turneri*-group continuing into a narrow sclerotization of the intersegmental membrane; and in the *seminitida*-group separated from paired sclerotizations in the intersegmental membrane which form lateral flaps beneath the epandrium. Gonocoxite usually broadly rounded posteriorly, often with a more or less distinct projection. Distal end of dorsal gonocoxal process long and finger-shaped, often reaching to or beyond level of posterior corner of epandrium. Stylus and ventral

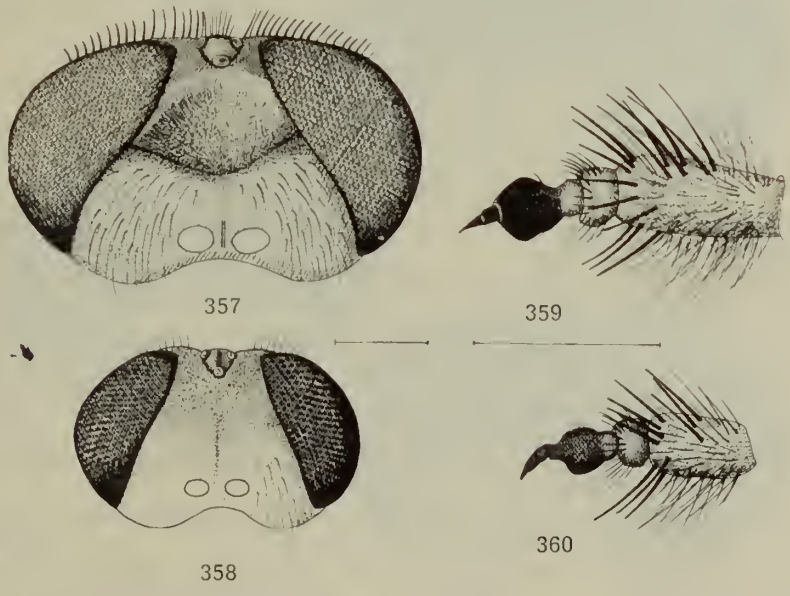


Figs 351–356. *Thereva analis*-group. 351, 352, female heads in frontal view; 353–356, antennae. 351, *T. analis*; 352, *T. reclusa*; 353, *T. analis*, ♂ holotype; 354, *T. congoensis*, ♂ holotype; 355, *T. reclusa*, ♀; 356, *T. reclusa*, ♂ holotype. Scale: 0·5 mm.

lobe well-developed. Hypandrium present as a narrow sclerite between the ventral basal part of gonocoxites. Aedeagus simple; phallic part comparatively long, narrow and curved in lateral view; in dorsal view several times wider proximally than distally. Dorsal apodeme in dorsal view never narrower than proximal part of phallus. Ejaculatory apodeme simple. Tergite 8 constricted in middle, but less so in the *turneri*-group. Sternite 8 of rather variable shape.

Remarks. Eleven species of *Thereva* are known to occur in Africa south of the Sahara. The genus seems to be restricted to the continental part of the Ethiopian region, as no representatives are so far known from Madagascar or from other islands belonging to the region. This fact indicates either that the genus is a relatively recent evolutionary group, or that it has penetrated into the Ethiopian region from a comparatively recent date, or both.

A great many species from all zoogeographical regions have been described into *Thereva*, but future research will certainly show that *Thereva* in a strictly monophyletic sense is primarily a Holarctic group, with many species in the Nearctic and Palaearctic regions. Based on a study of the type-species, *plebeja*, and of many other European species, the following synapomorphic characters can be listed: face always strongly pilose; head low and wide, i.e. the distance between lower corner of eyes usually longer than height of head; female frons usually with one or two polished black calli, the callus rarely secondarily covered with tomentum; a relatively high number (4–5) of notopleural setae; pile present on all the pleura,



Figs 357–360. *Thereva turneri*-group, 357, 358, female heads in frontal view; 359–360, antennae. 357, *T. curticornis*; 358, *T. globulicornis*; 359, *T. curticornis*, ♀; 360, *T. globulicornis*, ♂ holotype. Scale: 0·5 mm.

prosternum and coxae; abdomen broadly built; epandrium very constricted along the mid-line; two lateral flaps present on underside of epandrium.

The Ethiopian species of *Thereva* clearly fall into three groups. The largest and most widespread is the *seminitida*-group, which is represented by 5 species, one of which includes 3 subspecies. The species of the *seminitida*-group represent the most typical *Thereva*, and are closely related to the dominant Holarctic stock of species, above all to the *nobilitata*-group. In Africa the *seminitida*-group occurs mainly in the afro-alpine areas and has an obviously relic distribution pattern. The only non-alpine species is *Thereva capensis* from the Cape area. This species is a fine example of parallelism on the specific level, as it closely resembles *Thereva fuscipennis* Zetterstedt from Scandinavia.

The other two species-groups in the Ethiopian region are the *analis*-group and the *turneri*-group, both of which contain three species. While the *analis*-group is certainly a monophyletic group, the *turneri*-group is not as obviously one. The relationship of these two groups with the *seminitida*-group (representing *Thereva* in its strictest sense) is not at all clear. It cannot be ruled out that the *turneri* + *analis*-groups represent a different evolutionary line from that leading to *Thereva* in the strictest sense; in other words, the genus *Thereva* in the sense of the present paper is a polyphyletic group. Both the external morphology and the structure of the male terminalia indicate that the *analis*- and *turneri*-groups are derived from the *Irwiniella*-complex of species. Until more information is available, however, it seems justifiable to place the species of all three groups in *Thereva*, though this is certainly a rather conservative treatment and future research will probably divide the genus up still further.

Key to Ethiopian Species of *THEREVA*

Males

1 Abdomen entirely whitish grey tomentose and with exclusively whitish pile (*analis*-group) 2

– Abdomen not entirely whitish grey tomentose, often extensively darkened, or at least with brownish or blackish anterior bands on the first tergites 4

2 Mesonotum practically uniformly greyish; *dc* setae present. Antennal style about half as long as third antennal segment, which is remarkably slender apically (Text-fig. 354) . . . . . ***congoensis*** (p. 313)

– Mesonotum greyish with 3 or 4 more or less distinct, brownish grey to brownish bands; *dc* setae absent. Antennal style only about one-third as long as third antennal segment (Text-fig. 353), or if longer, then third segment not slender apically (Text-figs 355–356) 3

3 Genae evenly rounded, and with tomentum and whitish pile similar to that on lower face and occiput. Epandrium rather long (Text-fig. 375) . . ***analis*** (p. 310)

– Anterior part of genae slightly swollen, the posterior surface of this swollen part dull black and with short, stiff black hairs. Epandrium short (Text-fig. 388) ***reclusa*** (p. 315)

4 At least tergites 2–4 very distinctly banded: anterior parts shining black to brownish black, posterior parts whitish grey tomentose. Pile long and whitish (*turneri*-group) 5

– Tergites 2–4 only indistinctly banded, mostly blackish, brownish grey or greyish and without tomentum; or posterior corners of tergites with greyish tomentum, which never forms distinctly demarcated bands along the posterior margin (*seminitida*-group) 6

5 T_1 with 2–3 *ad* and *pd* setae which are very long and erect. Tergites with narrow, subshining brownish black anterior bands . . . . . ***globulicornis*** (p. 319)

– T_1 with 4–10 *ad* and *pd* setae which are moderately long and more decumbent. Tergites with broader shining black anterior bands . . . . . ***turneri*** (p. 317)

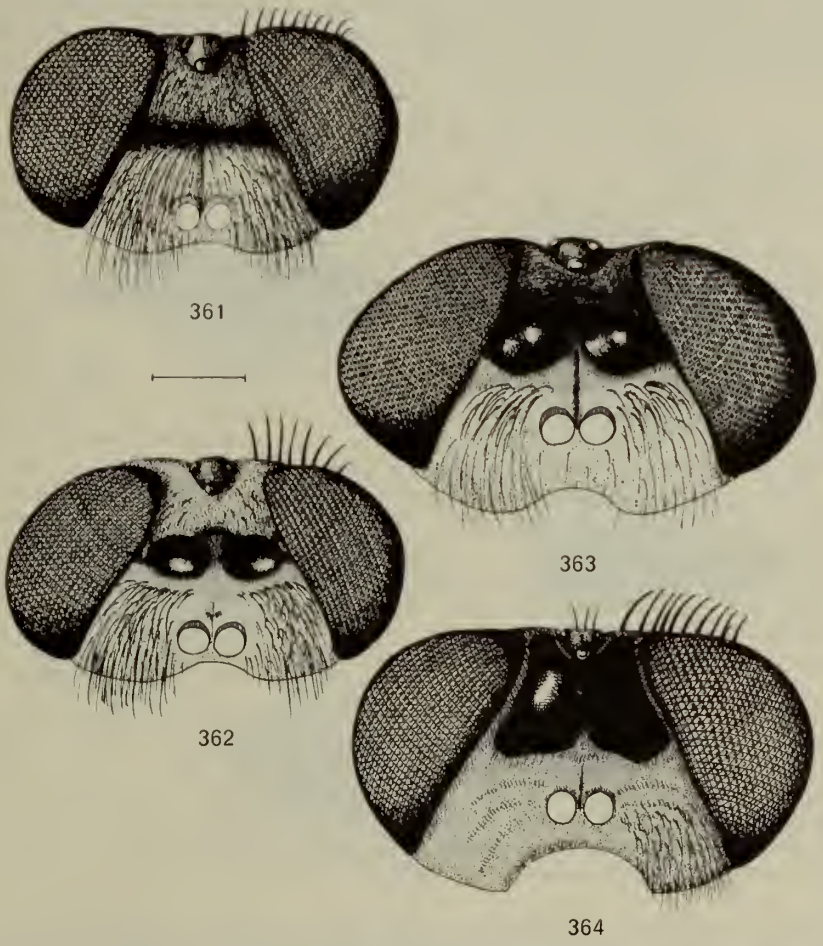
6 F_3 with *pv* setae at base . . . . . species near ***bipunctata*** (p. 334)

– F_3 without *pv* setae at base (*seminitida*-subgroup) 7

7 *Dc* setae absent. Only 1 *sa* seta on each side 8

– *Dc* setae present. Usually 2 *sa* setae on each side 9

8 Sternites as well as postero-lateral corners of tergites distinctly yellowish brown. (Kenya–Tanzania) . . . . . ***seminitida seminitida*** (p. 324



FIGS 361–364. *Thereva seminitida*-group, female heads in frontal view. 361, *T. seminitida*; 362, *T. chillaloensis*; 363, *T. tuberculifrons*; 364, *T. capensis*. Scale: 0·5 mm.

– Sternites and postero-lateral corners of tergites dark greyish tomentose, but all sternites with yellowish brown hind-marginal seams. Terminalia greyish black. (Ethiopia) . . . . . ***chillaloensis*** (p. 327)

9 Proboscis short, about half as long as distance from base of proboscis to antennal bases 10

– Proboscis longer, at least three-quarters as long as distance from base of proboscis to antennal bases 11

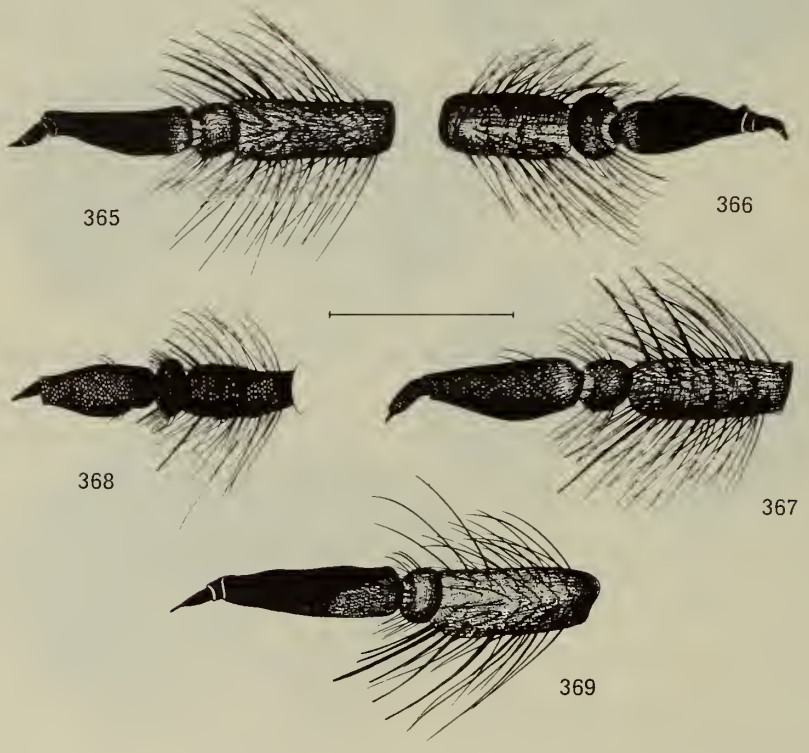
10 Larger species, 9·0–10·7 mm. At least 12 very long and slender post-ocular setae on each side. F_3 with exclusively yellowish adpressed hairs on anterior surface. Antennae long (Text-fig. 369). (Cape Prov.) . . . . . ***capensis*** (p. 332)

– Smaller species, less than 7 mm. At most 8 post-ocular setae, which are short and slender. F_3 with predominantly blackish adpressed hairs on anterior surface. Antennae short (Text-fig. 368). (Natal) . . . . . ***natalensis*** (p. 330)

11 Scutellum distinctly more than twice as wide as long along the mid-line. Head in profile with tip of proboscis not reaching to level of antennal bases 12

– Scutellum not twice as wide as long along the mid-line. Head in profile with tip of proboscis extending beyond level of antennal bases . ***seminitida occidentalis*** (p. 325)

12 All tergites exclusively blackish except for paler hind-marginal seams. Pile on lateral parts of tergites black. 2 *sa* setae on each side ***seminitida stuckenbergi*** (p. 326)



Figs 365–369. *Thereva seminitida*-group, antennae. 365. *T. s. seminitida*, ♂; 366, *T. chillaloensis*, ♂ holotype; 367, *T. tuberculifrons*, ♂ lectotype; 368, *T. natalensis*, ♂ holotype; 369, *T. capensis*, ♂ holotype. Scale: 0·5 mm.

– All tergites at least partly greyish tomentose posteriorly, and terminal tergites nearly entirely greyish tomentose. Pile on lateral parts of tergites mainly pale. Only 1 *sa* seta on each side . . . . . ***tuberculifrons*** (p. 328)

Females

1 Frons with one or two shining black calli, or frons largely shining blackish (Text-figs 361–364) 2
– Frons without a shining black callus, or if with a darker pattern then it is formed by dark tomentose areas (Text-figs 351, 352) 8
2 Frons largely shining blackish (Text-fig. 364), the blackish colour also covering the areas laterally of the ocellar triangle. Paler tomentum restricted to lower frons and a narrow strip along eye-margins on upper frons . . ***capensis*** (p. 332)
– Frons often largely tomentose (Text-figs 361–363) with only a narrow indistinct black callus, or with a well-marked callus which leaves the upper frons including the areas laterally of the ocellar triangle tomentoes 3
3 Frons (Text-fig. 363) with large, well-marked callus, or (Text-fig. 362) with two well-marked, oval calli 4
– Frons (Text-fig. 361) largely brownish to brownish grey tomentose, often with a narrow blackish band on middle, which may be divided medially . . . 6
4 Frons (Text-fig. 363) with a large, strongly protruding frontal callus. Tergites entirely shining black . . . . . ***tuberculifrons*** (p. 328)
– Frons (Text-fig. 362) with two well-marked calli. Tergites with shining black band and greyish tomentose areas behind 5
5 F_3 with a few short *pv* setae at base. Tergites 2–5 with continuous greyish tomentose bands along posterior margins . . . . species near ***bipunctata*** (p. 334)
– F_3 without *pv* setae at base. Tergites only greyish tomentose in postero-lateral corners . . . . . ***chillaloensis*** (p. 327)
6 *Dc* setae absent. Only 1 *sa* seta on each side. Frons (Text-fig. 361) usually with a rather distinct, but narrow, black transverse band over the middle, which may be divided along the mid-line . . . . . ***seminitida seminitida*** (p. 324)
– *Dc* setae present. 2 *sa* setae on each side. Frons with a more or less distinct blackish band over the middle, sometimes covered with brownish tomentum . 7
7 Postero-lateral corners of tergites 2–5 distinctly greyish tomentose. Distance between outer margin of upper ocelli and eye-margin equalling the width of an ocellus . . . . . ***seminitida occidentalis*** (p. 325)
– Postero-lateral corners of tergites 2–5 without tomentum, but more brownish black in colour. Distance between outer margin of upper ocelli and eye-margin equalling twice the width of an ocellus . . . ***seminitida stuckenbergi*** (p. 326)
8 Frons (Text-figs 351, 352) tricoloured: dark brownish tomentose above, dull black on middle, and greyish tomentose below 9
– Frons (Text-figs 357, 358) not tricoloured 10
9 Middle of frons (Text-fig. 351) with a large continuous dull black band. Tergites 5–7 at least partly glossy black . . . . . ***analis*** (p. 310)
– Middle of frons (Text-fig. 352) with two small, well-separated dull black spots. Tergites 5–7 entirely whitish grey tomentose . . . . . ***reclusa*** (p. 315)
10 Third antennal segment (Text-figs 359–360) very short, almost globular. Tergites 2–5 either entirely tomentose or at least with continuous, greyish tomentose posterior bands 11
– Third antennal segment (Text-fig. 365) normal, not globular. Tergites 2–5 at most with postero-lateral corners greyish tomentose 6
11 Abdomen entirely brownish grey tomentose . . . ***globulicornis*** (p. 319)
– Abdomen with large, shining black bands on anterior tergites . ***curticornis*** (p. 318)

The *ANALIS*-Group

Three species are included in this group. The best-known species, *analis*, is widely distributed from Kenya in the north to Cape Province in the south, while the other two, *congoensis* and *reclusa*, are restricted to Zaire and Mozambique plus Natal province respectively.

Males of this group are characterized by the entirely whitish grey tomentose and haired abdomens, while the females have a frontal pattern consisting of differently coloured tomentum but never including shining black calli. The male terminalia also have some features in common. The structures ventrally beneath the epandrium and cerci are formed by a weakly sclerotized and pigmented paraproct (see Text-figs 374, 382), which continues into an intersegmental membrane which lacks any lateral sclerotized flaps as found in the *seminitida*-group (see Text-fig. 411). The gonocoxites have a small projection at the middle of the posterior surface, but not on the lower surface as in the *seminitida*-group; the styli have a long, slender tip; the aedeagi are very straight in lateral view, the phallic part being only slightly downcurved; and finally the aedeagi in dorsal view also have a similar appearance, with the distal margin of the dorsal apodeme convexly rounded and not ending in a narrow projecting part as in the *seminitida*-group nor with a concave incision as in the *turneri*-group.

The *analis*-group is certainly a monophyletic unit. The species, especially *analis*, are very similar to the Palaearctic *Thereva annulata* (Fabricius) in general appearance. This similarity is, however, only superficial as the male terminalia are very different in fundamental structure.

Thereva analis Kröber

(Text-figs 351, 353, 370–377)

Thereva analis Kröber, 1912 : 405; Kröber, 1931 : 132. Holotype ♂, South Africa (NMW) [examined].

? *Thereva argentea* Kröber, 1912 : 401; Kröber, 1931 : 132. Holotype ♂. South Africa (destroyed).

[*Thereva albohirta* Ricardo sensu Kröber, 1933 : 298. Misidentification.]

Diagnosis. ♂. Abdomen entirely whitish grey tomentose and with whitish pile. Mesonotum greyish with 3 or 4 darker bands and without *dc* setae. Genae evenly rounded and with similar colour and pile as on lower occiput.

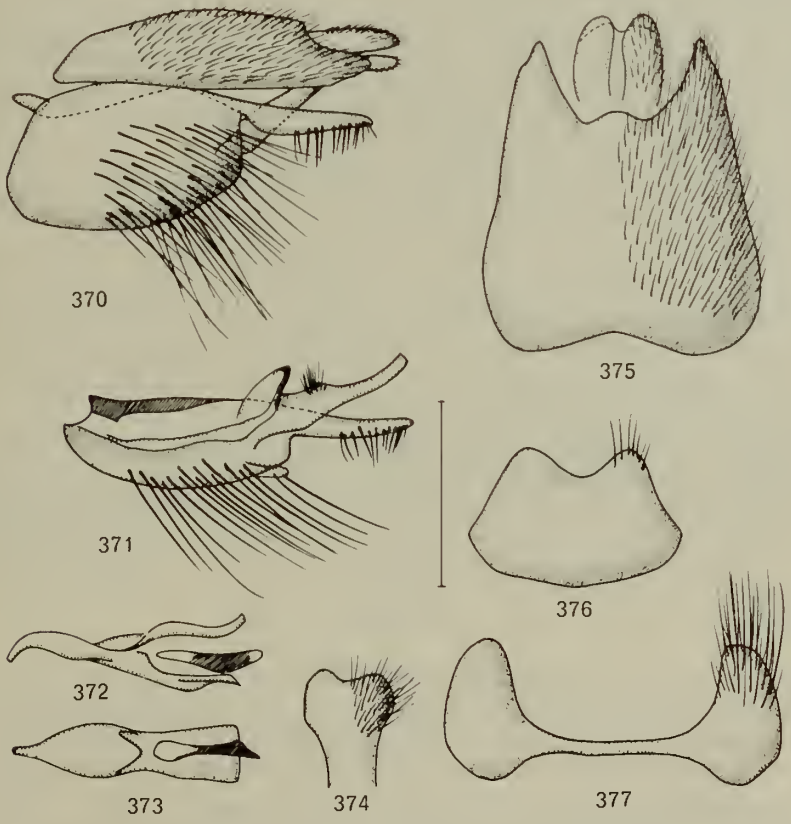
♀. Frons with a continuous dull black band over the middle and with tergite 7 glossy black.

Redescription. ♂. *Head* (Text-fig. 353). Facial index about 1·07. Eyes practically touching for a short distance, separated by at most half width of anterior ocellus. Proboscis short and slender, not reaching to level of antennal bases. Palpi almost as long as proboscis, greyish and with whitish pile. Upper corner of frons bare and dark brownish to blackish. Lower frons, face and genae covered with thick silvery whitish grey tomentum. Lower frons with long black hairs. Face laterally with a variable number of black hairs: in some specimens only a few black hairs are present on upper part at level of antennae, but in others a broad stripe of black hairs runs down to lower margin of eye. Other parts of face with long whitish pile. Occiput greyish to silvery greyish tomentose, with long whitish pile. Only 4–6 rather short post-ocular setae on each side, and a similar or smaller number of occipital setae below the post-oculars. First and second antennal segments blackish with greyish tomentum; pile long and consisting of both black and whitish hairs, the former predominating dorsally, the latter ventrally. Third antennal segment slender, usually blackish, but apical half or more sometimes more or less brownish. Style black.

Thorax. The mesonotal pattern shows some variation. Ground colour always greyish. Three or four bands of a darker colour. When three bands are present, they are usually dark brownish, well-demarcated, and the middle band has no paler line. Four bands occur in specimens where the bands as a whole are paler, dark greyish to greyish brown, and where the middle band is divided along the mid line by a stripe of the same greyish colour as the ground-colour. All intermediates occur between specimens with an indistinctly marked mesonotum and specimens with a strongly marked mesonotum. Mesonotal pile very long and consisting of blackish and whitish hairs, the black hairs often few in number. Scutellum greyish to brownish grey, palest laterally, with long whitish hairs, the black hairs often few in number. Pleura whitish grey tomentose and with long whitish hairs. *Dc* setae absent.

Wings. Cell M_3 closed at wing-margin or short-petiolate. Vein R_4 strongly S-curved. Colour greyish hyaline, sometimes with a brownish tinge. Veins blackish. Stigma brownish black. Cross-veins and fork of R_{4+5} slightly brownish infuscated. Halteres with blackish knob.

Legs. F_1 and f_2 usually with a single, moderately long *av* seta. F_3 with 4–5 *av* setae in



FIGS 370–377. Male terminalia of *Thereva analis*. 370, genitalia in lateral view; 371, right gonocoxite in intero-ventral view; 372, aedeagus in lateral view; 373, aedeagus in dorsal view; 374, paraproct; 375, epandrium in dorsal view; 376, sternite 8; 377, tergite 8. Scale: 0·5 mm.

apical two-thirds. T_1 with 2–3 *ad*, *pd* and *pv* setae, most of them longer than tibial diameter. T_2 and t_3 with the usual four rows of setae, the *pv* setae of t_3 being short. Coxae greyish like the pleura. Femora blackish with greyish tomentum, with long whitish hairs, and also with black hairs on f_1. Tibiae and tarsi yellowish brown, tips of tibiae and last tarsal segments sometimes more or less darkened.

Abdomen. Tergites and sternites entirely whitish grey tomentose, often with a silvery appearance. Abdominal pile long and exclusively whitish.

Terminalia (Text-figs 370–377). Epandrium and gonocoxites yellowish, the former with varying degrees of greyish tomentum. Pile whitish. Epandrium as in Text-fig. 375. Paraproct as in Text-fig. 374, without any lateral sclerotizations of the intersegmental membrane. Distal end of dorsal gonocoxal process very long and reaching to level of posterior margin of epandrium. Gonocoxite in lateral view (Text-fig. 370) with posterior margin broadly rounded and with a small tubercle near base of dorsal gonocoxal process. Stylus (Text-fig. 371) long and slender apically. Phallus in lateral view (Text-fig. 372) directed upwards, then slightly downcurved; in dorsal view (Text-fig. 373) broad proximally and gradually tapering into a narrow tip. Dorsal apodeme (Text-fig. 373) almost rectangular, but slightly narrower proximally than proximal part of phallus. In lateral view (Text-fig. 372), dorsal apodeme upcurved distally. Tergite 8: Text-fig. 377. Sternite 8: Text-fig. 376.

Total length 8·6–10·6 mm.

♀. *Head* (Text-fig. 351). Facial index about 0·98. Frons tricoloured: upper third brownish grey to brownish tomentose; middle third blackish and indistinctly shining on middle; lower third of frons and also rest of head silvery whitish grey tomentose. Pile on all parts much shorter than in male. More numerous post-ocular and occipital setae than in male. Other head-characters as described for male.

Thorax. Mesonotum in all available females greyish in ground-colour and with three very distinct and well-demarcated bands of a dark brownish colour, thus having the same appearance as the darkest coloured males with the trace of a pale mid-line on anterior part. Mesonotal pile much shorter than in male and consisting mainly of black hairs. Otherwise as described for male.

Wings. Cell M_3 and vein R_4 as in male. Ground-colour of wing darker than in male, and appearing darker because of extensive infuscations along the veins. Otherwise as in male.

Legs. Chaetotaxy as in male. Femora less tomentose than in male, and tibiae apparently darker brownish in colour.

Abdomen. Tergites 2–3 shining black, with posterior corners greyish tomentose. At lateral margin the tomentose area occupies almost posterior half of tergite, but the tomentose area is only very narrow on middle of tergites. Tergite 4 entirely shining black. Tergites 5–6 shining blackish on middle and also on extreme lateral margin, but laterally with two ill-defined and only slightly greyish tomentose areas. Tergites 7–8 shining blackish. Sternites mainly blackish, anterior three or four sternites more or less greyish tomentose laterally. Pile on segments 4–7 short, black and erect, on sternites 2–3 pale, and on tergites 2–3 pale laterally and black and adpressed dorsally. 6 + 6 rather short and blunt-tipped terminal spines.

Total length 9·0–10·3 mm.

Remarks. *Thereva argentea* Kröber (1912 : 401) is probably a synonym of *analis*. It was described from the male sex from 'Lichtenburg-Transvaal'. The type was stated to be in the Budapest Museum, and was destroyed in 1956. Judging from the description alone, it seem clear that Kröber only had a paler coloured specimen of *analis* before him when describing *argentea*.

Kröber (1933 : 298) did not recognize his own *analis* when working out material from the BMNH; both males and females of *analis* from various localities were identified as '*Thereva albohirta* Ric.'. Ricardo's species is endemic to Socotra and belongs to the genus *Irwiniella* (see p. 267).

Distribution. The species is widely distributed in eastern and southern Africa. It can be recorded from Kenya, Zambia, Rhodesia, South Africa and Lesotho.

Material examined.

Holotype ♂ of *analis*, South Africa: Bothaville, Orange-Freistaat, 20.xi.1898 (*Dr Brauns*) (NMW).

Kenya: Nanyuki (S.), 5 ♂, v.48 (*van Someren*) (BMNH); Kabete, 1 ♂, 18.xi.1918 (*T. J. Anderson*) (BMNH); Kikuyu, Mugugo, 2075 m., 11 ♂, 10–30.v.1970 (*D. J. Greathead*) (DJG); Nairobi, Dagoretti, 1 ♂, 26.v.1970 (*D. J. Greathead*) (DJG); Naivasha, 1 ♂, iv. 37, 1 ♂, vii. 37 (*H. J. A. Turner*) (BMNH); Ngong, 1 ♂ (*van Someren*) (BMNH); Nyeri (S.), 3 ♂, xii. 48 (*van Someren*); Narok, Masai Res., 1 ♂, 18.xi.1914 (*A. O. Lucknan*) (BMNH); Chyulu Hills, 1600 m, 2 ♂, iv. 38, 2 ♂, v. 38 (*Coryndon Mus.Expt.*) (BMNH); Kiambu, 1 ♂, 13.i.1931 (*R. H. le Pelley*) (BMNH). Zambia: Chisoka, 1 ♂, 1 ♀, 27.i.24 (*C. Smee*) (BMNH). Rhodesia: N. Vumba, 1 ♀, 7.viii.1964, 1 ♂, 29.viii.1964, 1 ♀, 31.viii.1964, 1 ♂, 1.ix.1964, 1 ♀, 29.iv.1965, 1 ♀, 12.ix.1965 (*D. Cookson*) (NM & ZMC). South Africa: Transvaal, Barberton, 1 ♂, 23.xii.1927 (*J. S. Taylor*) (NM); Transvaal, Tonetti, 1 ♂, 19.viii.1930 (*J. S. Taylor*) (NM); Transvaal, Woodbush west of Tzaneen, 1370 m, 1 ♂, 28.ii.1963 (*A. C. van Bruggen*) (NM); Transvaal, Randburg, 1 ♂, 12.ix.1964 (*H. N. Empey*) (MEI); Kraalfontein, Mara, 1 ♂, vi. 1918 (*H. G. Breijer*) (TM); Satara, 1 ♂, 6.v.1970 (*Vári & Potgieter*) (TM); Wonderboom, 1 ♂, 22.xii.04 (*C. J. Swierstra*) (TM); Umkomaas, 1 ♂, 14–23.vii.1917 (*P. A. Buxton*) (DM); Chobe River, Kabulabula, 1 ♀, 11–14.vii.1930 (*U.-L. Kal. Exp.*) (TM); Magude, 1 ♂, x. 1918 (*C. J. Swierstra*) (TM); Transvaal, Brakfontein, 4 ♂, 28–29.iii.1924 (*Lingnau*), *Thereva albohirta* Ric. det. Kröber, 1932 (DEI); Transvaal, nr Johannesburg, 2 ♂ (*A. J. Cholmley*) (BMNH); Johannesburg, 1830 m, 1 ♂, iii. 1899 (*J. P. Cregoe*) (BMNH); Natal, Drakensberg, Indument Forest, Cathedral Peak area, 1 ♂, 24.iv.1957 (*B. Stuckenberg*) (NM); Natal, Howick, 1 ♂ (*J. P. Cregoe*) (BMNH); Kloof, 24 km W. of Durban, 1 ♂, 26.ii.1915, 1 ♂, 6.viii.16 (*H. W. Bell-Marley*) (NM); Kloof, 1 ♂, 1.xi.15 (*Marley*) (SAM); Cape Province, Aliwal North, 1 ♂, xii. 1922 (*R. E. Turner*) (BMNH); Aliwal North, 1325 m, 1 ♀, 1–13.?.1923 (*R. E. Turner*) (BMNH). Lesotho: Mamathes, 3 ♀, 29.iii.1948, 1 ♂, 4.iv.1948 (*C. Jacot-Guillarmod*) (CJG). Khabos, Leribe Dist., 1 ♂, i. 1932 (*C. Jacot-Guillarmod*) (CJG).

Thereva congoensis sp. n.

(Text-figs 354, 378–385)

Diagnosis. ♂. Abdomen entirely whitish grey tomentose as in *analis*, but mesonotum practically uniformly greyish and with distinct *dc* setae. Third antennal segment (Text-fig. 354) remarkably slender apically and with a long style.

♀. Unknown.

Description. ♂. *Head* (Text-fig. 354). Facial index 0·95. Eyes practically touching for a short distance. Proboscis reaching a little beyond level of antennal bases. Palpi shorter than proboscis, greyish with whitish hairs. Upper corner of frons bare and brownish grey tomentose. Lower frons and other parts of head whitish grey tomentose. Lower frons with moderately long, blackish pile. Face, genae and occiput with long whitish pile. Post-ocular

setae long and hair-like, only 6 on each side; a similar number of occipital setae. First and second antennal segments blackish, with whitish grey tomentum, the pile long and consisting of both pale and blackish hairs. Third antennal segment brownish at middle, darkened basally and apically. Style black.

Thorax. Mesonotum practically uniformly greyish to whitish grey, without distinct stripes. Pile long and consisting of black and whitish hairs. Scutellum of the same colour as mesonotum, and with only whitish hairs. Pleura greyish with whitish pile. 1 or 2 *sa* setae. 1 pair of *dc* setae.

Wings. Cell M_3 short-petiolate. Vein R_4 strongly S-curved. Colour greyish hyaline. Veins and stigma pale brownish, slight shadows around cross-veins and fork of R_{4+5}. Knob of halteres dark.

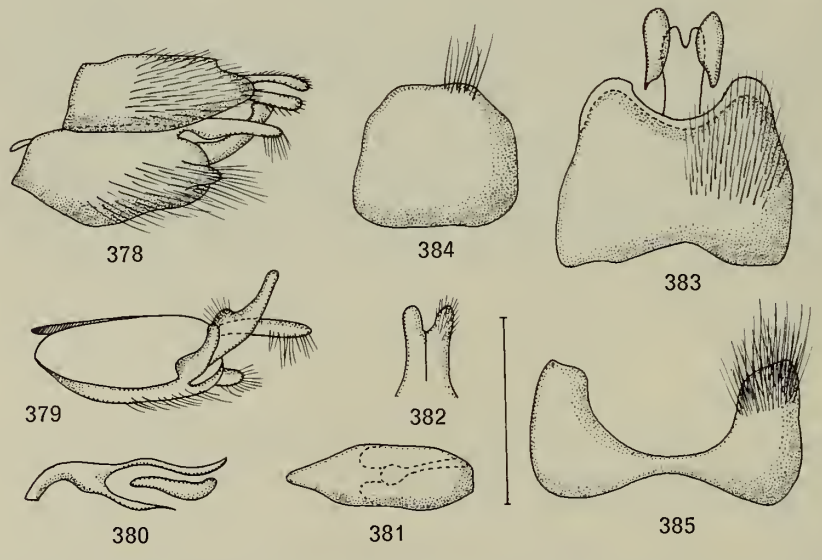
Legs. F_1 and f_2 without or with a single *av* seta. F_3 with 5–6 rather long *av* setae. Tibiae with the same arrangement of setae as in *analis*. Femora blackish with whitish grey tomentum, long and whitish pile, but with black hairs intermixed on posterior part of f_1. Tibiae and tarsi pale yellowish brown, tibiae at tips and last tarsal segments hardly darkened.

Abdomen. Tergites as well as sternites entirely whitish grey tomentose and with whitish pile.

Terminalia (Text-figs 378–385). Greyish tomentose and with short whitish pile. Epandrium as in Text-fig. 383, distinctly shorter than in *analis* (Text-fig. 375). Distal end of dorsal gonocoxal process reaching well beyond level of posterior margin of epandrium. Gonocoxite in lateral view (Text-fig. 378) with posterior margin rounded and with a distinct projection. Stylus (Text-fig. 379) rather short. Phallus in lateral view (Text-fig. 380) straight proximally and gently curved at about 45 degrees; in dorsal view (Text-fig. 381) broad proximally and gradually decreasing in width towards apex. Dorsal apodeme flat and almost straight (Text-fig. 380); in dorsal view rectangular, with distal corners rounded. Tergite 8: Text-fig. 385. Sternite 8: Text-fig. 384.

Total length about 7·5 mm.

♀. Unknown.



FIGS 378–385. Male terminalia of *Thereva congoensis*, holotype. 378, genitalia in lateral view; 379, right gonocoxite in intero-lateral view; 380, aedeagus in lateral view; 381, aedeagus in dorsal view; 382, paraproct; 383, epandrium in dorsal view; 384, sternite 8; 385, tergite 8. Scale: 0·5 mm.

MATERIAL EXAMINED.

Holotype ♂, CONGO: Brazzaville, Mission Chari-Tchad, vii. 1904 (*Dr J. Decorse*) (MP).

Paratype ♂, No. 305, Coll. Mus. Congo (*Dr A. Fain*) (MCT).

Thereva reclusa sp. n.

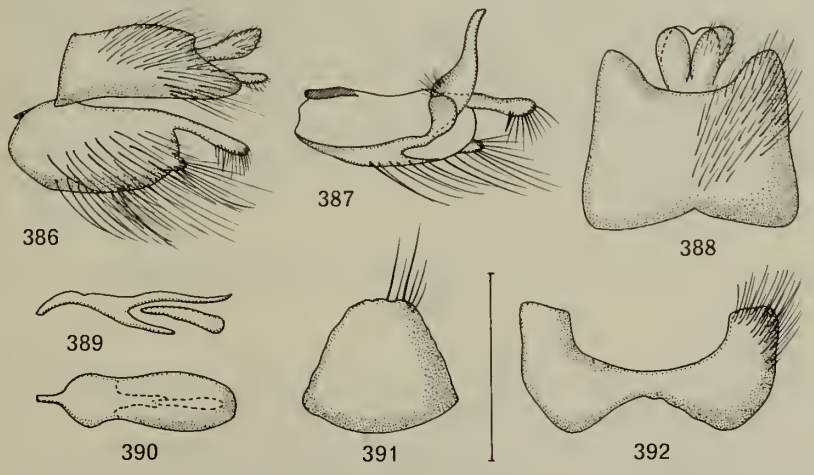
(Text-figs 352, 355, 356, 386–392)

DIAGNOSIS. ♂. Similar to *analis* in general appearance, but genae swollen anteriorly and the posterior surface of this swollen area dull black and with short stiff black hairs. Epandrium (Text-fig. 388) shorter than in *analis*.

♀. With two well-separated dull black patches on middle of frons; tergite 7 greyish tomentose.

DESCRIPTION. ♂. *Head* (Text-fig. 356). Facial index about 0·83. Eyes touching for rather a long distance. Proboscis nearly reaching to level of antennal bases. Palpi only slightly shorter than proboscis, greyish with whitish pile. Upper corner of frons bare and darkened on two small lateral patches. Rest of frons and other parts of head whitish grey tomentose, but genae darker from certain angles, and anterior part of genae slightly swollen. Pile on frons and lateral parts of face black and moderately long, on other parts of head whitish, but some stiff black hairs present behind the darkened swollen part of genae. About 12 post-ocular and occipital setae on each side, slender and moderately long. First and second antennal segments blackish with greyish tomentum; pile long and mainly black. Third antennal segment brownish, slightly darkened near base but actual base brownish. Style blackish.

Thorax. Mesonotum greyish to brownish grey and with four darker brownish bands, the two median bands being most distinct and separated only by an indistinct paler mid line. Lateral bands less distinct, especially in front. Mesonotal pile moderately long and consisting of both black and whitish hairs. Scutellum greyish, but greyish brown in front, pile whitish. Pleura greyish with whitish pile. Only 1 *sa* seta. *Dc* setae absent.



FIGS 386–392. Male terminalia of *Thereva reclusa*, holotype. 386, genitalia in lateral view; 387, right gonocoxite in intero-ventral view; 388, epandrium in dorsal view; 389, aedeagus in lateral view; 390, aedeagus in dorsal view; 391, sternite 8; 392, tergite 8. Scale: 0·5 mm.

Wings. Cell M_3 short-petiolate. Vein R_4 narrowly S-curved, proximal part almost straight. Colour hyaline, with a greyish brown tinge. Veins and stigma dark brownish. Cross-veins and fork of R_{4+5} brownish infuscate. Knob of halteres pale yellowish brown.

Legs. F_1 without *av* setae. F_2 with 1–2 *av* setae. F_3 with 5–6 *av* setae in apical two-thirds. T_1 with 2–3 *ad*, *pd* and *pv* setae. T_2 and T_3 with rows of setae in all four positions, but all setae comparatively short. Coxae greyish, like the pleura. Femora blackish with greyish tomentum. Femoral pile whitish, but with black hairs intermixed on posterior surface. Tibiae and tarsi yellowish brown, tips of tibiae and last tarsal segment only slightly darkened.

Abdomen. Tergites and sternites uniformly whitish grey tomentose and with long whitish hairs.

Terminalia (Text-figs 386–392). Epandrium and gonocoxites greyish tomentose, like the rest of the abdomen, and with exclusively whitish hairs. Epandrium as in Text-fig. 388. Paraproct and intersegmental membrane very weakly sclerotized and pigmented, not forming any distinctly marked sclerite. Distal end of dorsal gonocoxal process overhanging posterior margin of epandrium. Gonocoxite (Text-fig. 386) with posterior margin broadly rounded and provided with a short projection. Stylus as in Text-fig. 387. Phallus in lateral view (Text-fig. 389) only slightly down-curved, in dorsal view (Test-fig. 390) with almost circular proximal part and a short, narrow tip. Dorsal apodeme flat and straight in lateral view (Text-fig. 389), broadly oval in dorsal view (Text-fig. 390). Tergite 8: Text-fig. 392. Sternite 8: Text-fig. 391.

Total length 8·6 mm.

♀. *Head* (Text-figs 352, 355). Facial index almost 0·94. Upper frons brownish grey tomentose, with two oval and dull blackish spots laterally. Lower frons and rest of head whitish grey tomentose as in male, and genae also darker (dull blackish) from certain angles. Frons and face with a rather sparse pile of moderately long black hairs. Otherwise as in male, but antennal pile much shorter.

Thorax. Mesonotum more distinctly marked than in male, and the two median brown bands confluent, i.e. the pale median line absent or at least very indistinct. Scutellum more brownish than in male. Chaetotaxy as in male.

Wings as in male, but ground-colour darker and with distinct infuscations around both cross-veins and along longitudinal veins on apical half of wing.

Legs. F_1 and f_2 with 1–2 *av* setae. Chaetotaxy and colour as in male.

Abdomen. Tergites 2–4 with large, shining brownish black anterior bands, almost reaching posterior margin of tergites along the mid-line, but not reaching actual lateral margins. Lateral and posterior parts of these tergites whitish grey tomentose. Tergites 5–7 whitish grey tomentose. Tergite 8 shining blackish. Sternites 2–6 greyish to greyish brown, partly subshining. Sternite 8 shining black. Tergites 2–4 with whitish hairs laterally and black adpressed hairs on disc. Tergite 4 on middle, and tergites 5–8, with erect pile consisting of pale brownish hairs. Sternites also with erect pale brownish pile. 6 + 6 moderately long and rather pointed terminal spines.

Total length about 8 mm.

DISTRIBUTION: Mozambique and Natal Province in South Africa.

MATERIAL EXAMINED.

Holotype ♂, MOZAMBIQUE: Lourenço Marques, i. 1956 (*B. Stuckenberg*) (NM).

Paratypes. MOZAMBIQUE: 'Delagoa-Bai, Süd-Ost-Africa', 1 ♀ (*v. Röder*), det. *Psilocephala pallipes* Kröb. by Kröber, 1926 (ZIH); Delagoa Bay, 1 ♀ (*Monteiro*) (BMNH); same locality, 1 ♂, xi. 1921 (*Bell-Marley*) (DM). SOUTH AFRICA: Natal, 32 km S. of Ndumu Game Res., 100 m, 1 ♂, 3 ♀, 29.xi.1971 (*M. E. Irwin*) (NM & ZMC); Zululand, Manguzi River, m. Maputa, 1 ♂, xi–xii. 1945 (*H. W. Bell-Marley*) (DM).

The *TURNERI*-Group

In this group are placed three species in which the males have abdominal tergites 2–4 distinctly banded and abdomen exclusively whitish haired. It is not clear whether the species form a monophyletic group. The male sex of only two species, *turneri* and *globulicornis* is known. The aedeagi of both these species have the dorsal apodeme with a concave distal margin which is neither convexly rounded as in the *analis*-group, nor has a narrow projection as in the *seminitida*-group. In both species the paraproct continues into a well-marked sclerotization of the intersegmental membrane. Cell R_4 is remarkably narrow in all species, 2·4–2·6 times as long as wide at apex.

The interspecific variability in tibial chaetotaxy, especially on t_1, is very unusual. In *turneri* the dorsal setae of t_1 are strong, very numerous and rather decumbent. The single female specimen available of *curticornis* has a similar arrangement of the tibial setae as in *turneri*. *T. globulicornis* has a 'normal' arrangement of the tibial setae, i.e. few in number and more erect.

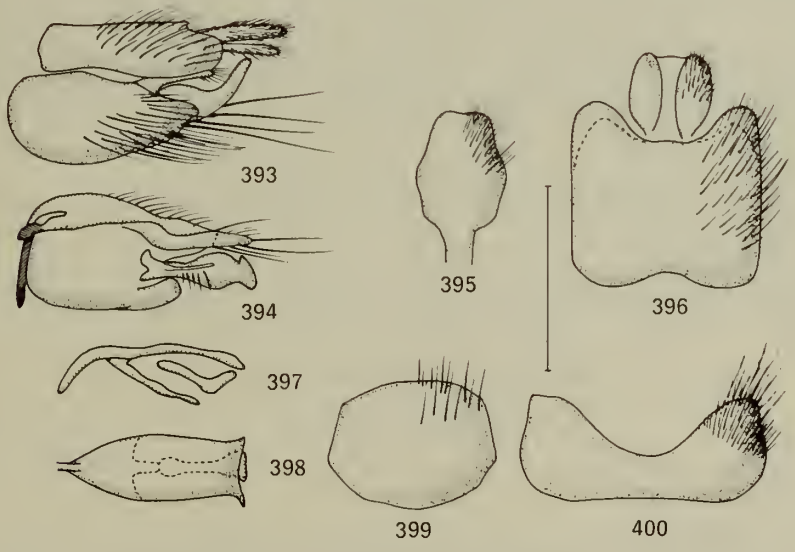
The females of this group usually have a broad frons, dulled by tomentum. The third antennal segment is short and constricted basally as in the genus *Caenophthalmus*.

Thereva turneri sp. n.

(Text-figs 393–400)

Diagnosis. ♂. A greyish black species with distinctly banded abdomen which has exclusively whitish hairs. Tibiae unusually strong, and with numerous setae on dorsal surface, also on the *pd* surface on t_1.

♀. Unknown.



Figs 393–400. Male terminalia of *Thereva turneri*, holotype. 393, genitalia in lateral view; 394, right gonocoxite in interior view; 395, paraproct; 396, epandrium in dorsal view; 397, aedeagus in lateral view; 398, aedeagus in dorsal view; 399, sternite 8; 400, tergite 8. Scale: 0·5 mm.

Description. ♂. *Head.* Facial index about 1·27. Eyes touching for rather a long distance. Upper facets slightly enlarged. Proboscis reaching to level of antennal bases. Palpi greyish with whitish pile. Upper frons narrowly brownish black. Rest of frons and other parts of head whitish grey to greyish tomentose. Pile on frons and lateral parts of face long and blackish, whitish on rest of head. More than 30 long, thin post-ocular setae on each side. Only a few occipital setae. First and second antennal segments intensely whitish grey tomentose and with a moderately long but rich pile of black setae and whitish hairs. Third segment lost.

Thorax. Mesonotum greyish, with three indistinctly marked brownish black bands. Mesonotal pile apparently exclusively whitish, and long. 1 *sa* seta on each side, *dc* setae absent. Scutellum greyish black with long whitish pile. Pleura whitish grey tomentose and with whitish hairs.

Wings. Cell M_3 closed at wing-margin. Vein R_4 with an almost straight proximal section, then rather suddenly bent and ending in a low curve. Colour uniformly greyish brown hyaline. Veins, stigma and halteres brownish black.

Legs. F_1 and f_2 apparently without *av* setae. F_3 with 4–5 short *av* setae. All tibiae with an unusually rich number of setae on dorsal surfaces, consisting of the usual rows of *ad* and *pd* setae and additional shorter setae in a true dorsal position; the *ad* and *pd* rows with more setae than usual. Femora blackish, thinly greyish tomentose and with whitish hairs. Tibiae stronger than usual and yellowish brown. Tarsi only slightly darker than tibiae.

Abdomen. Tergites 2–5 strongly banded, anterior parts black and shining, posterior parts whitish grey. Black anterior bands occupying half tergal length on tergite 2, more than half tergal length on tergite 3, and less than half tergal length on tergites 4–5. Posterior tergites entirely whitish grey tomentose. Tergites 2–5 also with whitish yellow, hind-marginal seams. Sternites mainly greyish. Abdominal pile long and whitish.

Terminalia (Text-figs 393–400). Brownish yellow, slightly greyish tomentose and with whitish hairs. Epandrium (Text-fig. 396) nearly square, with a moderately deep incision on anterior and posterior margins. Paraproct continuing into a distinct sclerite (Text-fig. 395). Gonocoxite in lateral view (Text-fig. 393) with narrowly rounded margin. Distal end of dorsal gonocoxal process reaching to level of posterior margin of epandrium. Stylus (Text-fig. 394) of rather a complicated shape. Ventral lobe very short. Phallus in lateral view (Text-fig. 397) very slender and gently downcurved, in dorsal view (Text-fig. 398) very broad proximally and rapidly narrowing. Dorsal apodeme flat and almost rectangular. Ejaculatory apodeme bent. Tergite 8: Text-fig. 400. Sternite 8: Text-fig. 399.

♀. Unknown.

Remarks. See discussion above under the *turneri*-group.

Material examined.

Holotype ♂, South Africa: Cape Prov., Montagu, 1–21.x.1924 (*R. E. Turner* (BMNH).

Thereva curticornis Kröber

(Text-figs 357, 359)

Thereva curticornis Kröber, 1912 : 401 [nec Kröber, 1931 : 131]. Holotype ♀, South Africa (MB) (destroyed).

Diagnosis. ♂ unknown.

♀. Frons broad and entirely greyish to brownish grey tomentose, with third antennal segment (Text-fig. 359) extremely short and globular and with broad, shining blackish anterior bands on first tergites.

Redescription. ♀. *Head* (Text-figs 357, 359). Facial index 1·21. Frons broad and strongly widening downwards, with a depressed area above middle. Upper frons pale greyish

brown tomentose, lower frons and other parts of head whitish grey to whitish tomentose. Frons with a moderate pile of black hairs, other parts of head with long, whitish pile. About 16 short post-ocular setae on each side and a similar number of occipital setae. Proboscis short. Palpi yellowish with whitish pile. First, second and base of third antennal segments whitish grey, first segment yellowish brown translucent. Rest of the very short third segment black, and style also black.

Thorax. Mesonotum and scutellum almost uniformly dark greyish brown, more greyish anteriorly and laterally, with two narrow and very indistinct paler stripes. Mesonotal pile rather short and consisting of black and whitish hairs. Scutellum and pleura with whitish pile. Pleura greyish tomentose. 2 *sa* setae on each side, and a pair of *dc* setae.

Wings. Cell M_3 short petiolate. Vein R_4 nearly straight in proximal half, then slightly downcurved distally. Colour uniformly and rather intensely brownish. Stigma and veins not much darker than rest. Halteres blackish.

Legs. F_1 without setae. F_2 with a single *av* seta. F_3 with 3–4 short *av* setae. Tibiae appearing stronger than usual (cf. *turneri*) and with a stronger pile on dorsal surface than is usual in the genus (as in *turneri*). The ventral rows are also rather rich in setae. Femora, tibiae and first tarsal segment dirty yellowish brown, femora only slightly tomentose and with whitish hairs.

Abdomen. Tergites 2–3 predominantly shining blackish, with only narrow posterior bands of whitish grey tomentum. Tergites 4–5 also with shining blackish, but narrower, anterior bands. Tergites 6–8 mainly shining brownish, only slightly tomentose laterally on tergite 6. Lateral parts of tergites yellowish brown translucent. Sternites mainly greyish tomentose, but distinctly yellowish brown translucent. Abdominal pile whitish on lateral parts of tergites 2–3 and on middle of sternites 2–3, short and blackish on rest. 6 + 6 broad and blunt-tipped terminal spines.

Total length 9·2 mm.

Remarks. Kröber (1912 : 401) described *curticornis* from a female specimen from 'Kap Willowmore, Kapland'. The holotype was located in the Budapest Museum, and has therefore most probably been destroyed. The description given above is based on an obviously conspecific female specimen.

Kröber (1931 : 131) later gave a slightly different English translation of his original description, but the figure of the antenna is very different from the figure given in the original description. He may have had a different specimen before him when preparing this 1931 figure, and this specimen would have been identical with a specimen I received from the Transvaal Museum and which is labelled 'Capland, Willowmore, März 1916, Dr. Brauns' and 'Thereva curticornis Krb./det. Kröber 1927'. This specimen is not conspecific with the original *curticornis* and represents an undescribed species, which will not, however, be described until more material becomes available. The 1916 specimen is rather similar to true *curticornis*, but the antenna is differently shaped, the mesonotum and wings are paler, the abdomen is not so distinctly banded, and the tibiae have normal setae.

Material examined.

South Africa: Cape Prov., Seven Weeks Poort, 1 ♀, 17.xi.1940 (*G. van Son* (TM).

Thereva globulicornis sp. n.

(Text-figs 358, 360, 401–407)

Diagnosis. ♂. A small, slender species with narrower and less distinctly demarcated dark

tergal bands than in the preceding species, and with 'normal' tibial chaetotaxy. Third antennal segment (Text-fig. 360) shortened.

♀. With a broad and mostly mat brownish or greyish tomentose frons (Text-fig. 358), and a uniformly brownish grey tomentose abdomen.

Description. ♂. *Head* (Text-fig. 360). Facial index about 0·94. Eyes almost touching for a short distance. Upper facets distinctly enlarged. Proboscis short and slender, just reaching to level of antennal bases. Palpi as long as proboscis, pale yellowish and with whitish pile. All parts of head whitish grey to greyish tomentose. Frons with long black hairs, other parts of head with white hairs. 12–14 long and slender post-ocular setae on each side. A few occipital setae present, or occipital setae entirely absent. First and second antennal segments intensely whitish grey tomentose, first segment with whitish hairs and black setae apically and dorsally. Third antennal segment blackish grey to blackish, indistinctly paler brownish at the narrow base; remarkably short.

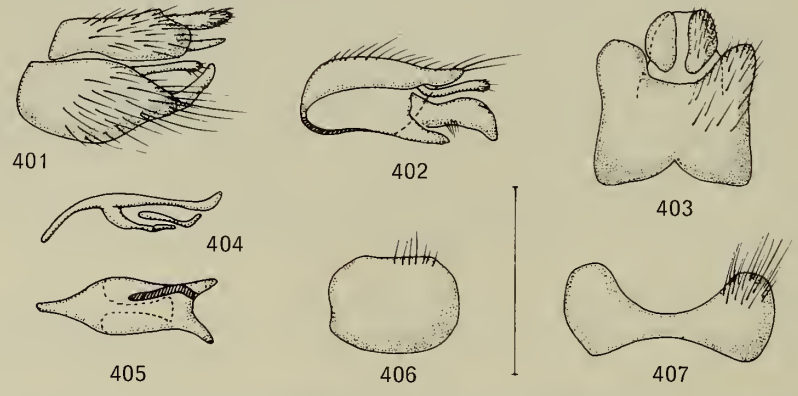
Thorax. Mesonotum largely brownish black to dark brownish and not shining, with two narrow paler greyish brown stripes and lateral parts of mesonotum also greyish brown tomentose. Scutellum brownish black. Mesonotal pile rather long and exclusively whitish. Pleura greyish with whitish pile. Usually only 1 *sa* seta present. *Dc* setae absent.

Wings. Cell M_3 closed, and shorter or longer petiolate. Vein R_4 with proximal section nearly straight, distal section forming a low curve. Colour hyaline with a whitish tinge. Veins and stigma brownish black, without any infuscation. Knob of halteres brownish black.

Legs. F_1 and f_2 without *av* setae, but f_2 sometimes with a single *pv* seta. F_3 with 3–5 *av* setae on apical half. T_1 with 2–3 *ad*, *pd* and *pv* setae, most of which are long and strong. T_2 with 2 or 3 strong setae in the normal four positions. T_3 with rows of 6–7 *ad*, *pd* and *av* setae, *pv* setae represented only by 2–3 very short setae. Coxae greyish like the pleura. Femora mostly greyish like the coxae, but distinctly yellowish brown at tips and sometimes more or less brownish on longitudinal streaks along both f_2 and f_3. Tibiae and tarsi yellowish brown, tips of tibiae and last tarsal segments indistinctly darkened.

Abdomen. Tergites mainly whitish grey tomentose, but tergites 2–5 with brownish black anterior bands; these bands occupying at most half tergal length, but not reaching lateral margins of tergites and narrowing along middle of tergites, the bands narrower on tergites 4–5 than on tergites 2–3. Sternites entirely whitish grey tomentose. Abdominal pile exclusively whitish, moderately long and rather sparse.

Terminalia (Text-figs 401–407). Epandrium and gonocoxites brownish, with more or less



Figs 401–407. Male terminalia of *Thereva globulicornis*, holotype. 401, genitalia in lateral view; 402, right gonocoxite in interior view; 403, epandrium in dorsal view; 404, aedeagus in lateral view; 405, aedeagus in dorsal view; 406, sternite 8; 407, tergite 8, Scale: 0·5 mm.

grey tomentum, the pile mainly whitish. Epandrium as in Text-fig. 403. Gonocoxite in lateral view (Text-fig. 401) with posterior margin broadly projecting. Distal end of dorsal gonocoxal process (Text-fig. 401) very slender and slightly overhanging posterior margin of gonocoxite. Stylus (Text-fig. 402) short and wide, broadly pointed at tip. Ventral lobe (Text-fig. 402) small. Phallus long and narrow in lateral view (Text-fig. 404) and only slightly curved, while in dorsal view (Text-fig. 405) it is broad proximally and gradually decreases in width towards tip. Dorsal apodeme (Text-fig. 404) quite flat, in dorsal view (Text-fig. 405) with side-margins and apical margin broadly incurved. Ejaculatory apodeme with a bend near tip. Tergite 8: Text-fig. 407. Sternite 8: Text-fig. 406.

Total length 5·5–7·2 mm.

♀. *Head* (Text-fig. 358). Facial index almost 1·14. Frons entirely dulled, mainly brownish to greyish tomentose, becoming gradually paler greyish on lower part, with sparse, but rather long, blackish hairs. Other parts of head whitish grey tomentose and with whitish hairs. About 8–10 short and strong post-ocular setae. 5–6 occipital setae present on each side. Other characters as in male.

Thorax. Mesonotum paler than in male, as the dark brownish colour is restricted to three narrow bands, of which the middle one is linear anteriorly. Mesonotum otherwise greyish to yellowish grey tomentose. Mesonotal pile consisting of both whitish and blackish hairs.

Wings as in male, but ground-colour with a more brownish tinge.

Legs. Chaetotaxy of femora and tibiae as in male. Femora predominantly yellowish brown in colour, but darkened and with greyish tomentum in varying degrees, especially on lower surfaces, on f_1 and at apex of f_3, in one specimen entirely yellowish brown. Tibiae and tarsi coloured as in male.

Abdomen. Tergites practically uniformly greyish to greyish brown tomentose and slightly subshining from certain angles, only tergite 8 glossy black. Pile short, consisting of yellowish adpressed hairs on the disc of tergites 2–3 and of erect black hairs on the rest. Sternites more pale greyish tomentose, especially on anterior sternites. 7 + 7 short, slender terminal spines.

Total length 6·5–8·5 mm.

Remarks. This species seems to be rather variable. The number of *sa* setae is not constant. The colour of the female frons varies from almost wholly greyish tomentose to practically brownish tomentose, and the colour of the femora is also variable (see description).

Material examined.

Holotype ♂, South Africa: Cape Prov., Pearly Beach, Bredasdorp (SAM).

Paratypes. South Africa: 6 ♂, 3 ♀, same data as holotype; Cape Prov., Buffalo Bay, 1 ♂, 26.xi.1967 (*H. K. Munro*) (NM); Cape Prov., False Bay, 3·2 km E. of Muizenburg, 2 ♂, 3.i.1972 (*Southern African Exp.*) (BMNH).

The *SEMINITIDA*-Group

This group contains six species in the Ethiopian region, one of which is divided into three subspecies. The group extends from Nigeria in the west to Kenya and S. Arabia in the east, and from the highlands of Ethiopia in the north to Cape area in the south. Most of the species are restricted to high mountainous regions, especially those species occurring nearest to the equator. It is of considerable interest that the Ethiopian species of the *seminitida*-group seem very closely related to species of the *Thereva nobilitata*-group, which contains many species in the

Palaearctic and Nearctic regions. The Palaearctic and Nearctic *plebeja*-group also reaches the Ethiopian region in Southern Yemen and Saudi Arabia, as one unnamed species closely related to *bipunctata* Meigen can be recorded from this area.

One of the best characters for the *seminitida*-group (and also for the *nobilitata*- and *plebeja*-groups) is found in the structures ventrally beneath the epandrium. The so-called paraproct is clearly separated in this group and is not fused proximally with a sclerotization of the intersegmental membrane (= ? sternite 10). This sclerotization is entirely divided, forming two flaps which have a sort of articulation with the posterior margin of the epandrium (Text-fig. 411). With a pin these flaps can be folded out independently of each other and of the paraproct. In the other two Ethiopian species-groups of *Thereva*, i.e. the *analis*-group and the *turneri*-group, these lateral flaps are absent, and the paraproct is weakly sclerotized and pigmented and merges imperceptibly into a weakly sclerotized and pigmented intersegmental membrane covering the ventral surface of the epandrium.

The *seminitida*-group is also characterized by the shape of aedeagus, which has a rather long, slender and down-curved phallus and a dorsal apodeme that terminates in a narrow projection distally. The female frons is neither entirely tomentose nor mainly shining blackish, but has one or two strongly marked calli of limited extent, very similar to that found in the *Thereva* of the northern hemisphere.

From a zoogeographical point of view, the species of the *seminitida*-group represent relic elements in the Ethiopian fauna of a basically Holarctic faunal element.

Thereva seminitida Becker

(Text-figs 361, 365, 408–416)

Thereva seminitida Becker, 1909 : 115.

Diagnosis. ♂. A blackish brown species with indistinctly banded abdominal tergites. Proboscis of normal length. Mesonotum with or without *dc* setae and with 1–2 *sa* on each side. Dorsal apodeme of aedeagus (Text-fig. 413) gently down-curved.

♀. Blackish brown with indistinctly banded abdomen. Frons (Text-fig. 361) brownish tomentose, on middle with a more or less distinct, black, transverse callus which is often divided along the mid line.

Redescription. ♂. *Head* (Text-fig. 365). Facial index about 1·00. Eyes practically touching for rather a short distance. Upper facets only slightly enlarged. Proboscis almost reaching to level of antennal bases. Palpi distinctly shorter than proboscis, brownish to brownish grey, with predominantly pale hairs but some black hairs at base. Upper corner of frons brownish black and subshining, frons otherwise brownish to greyish brown tomentose, palest on lower part. Face greyish brown to greyish tomentose, darkest laterally. Pile on frons and face almost all black and long, on middle of face with more or less yellowish hairs. Genae and occiput greyish to greyish brown tomentose and with mixed black and pale hairs. Post-ocular setae very long and thin, about 15 on each side; below these with about 10 occipital setae. Antennae rather short, dark brownish to blackish, with thin greyish tomentum on first two segments. Antennal pile long and mostly blackish.

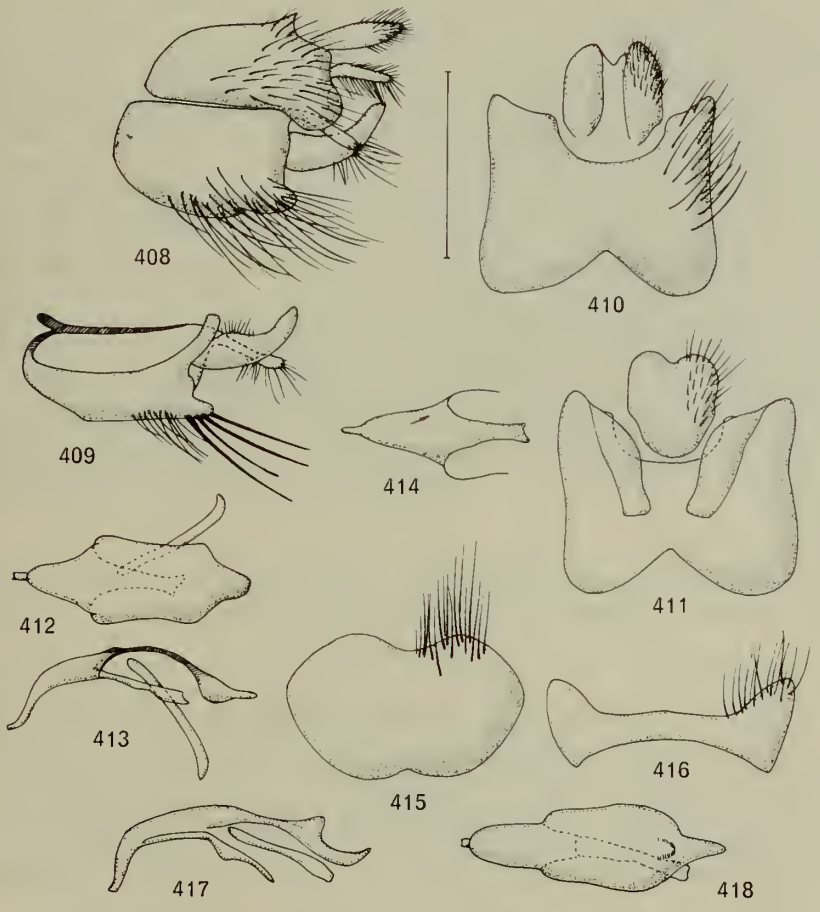
Thorax. Mesonotum pale greyish brown over dull blackish brown to nearly subshining blackish, sometimes striped. Mesonotal pile long and consisting of blackish and yellowish hairs. 1–2 *sa* setae present. *Dc* setae absent or present. Scutellum dark brownish with greyish brown margin, the pile mainly pale. Pleura blackish with rather thin greyish tomentum. Pleural pile yellowish.

Wings. Cell M_4 closed or narrowly open. Vein R_4 beginning with a straight section and terminating in a deep curve or evenly curved. Ground-colour often rather intensely greyish

brown to brownish. Cross-veins and fork of R_{4+5} sometimes infuscate. Veins and stigma brownish black. Halteres brownish black.

Legs. F_1 and f_2 without *av* setae, or f_2 with a single *av* seta. F_3 with a row of 6–8 *av* setae on almost the entire length, sometimes biserially arranged basally. T_1 with 2–3 *ad*, *pd* and *pv* setae. T_2 and t_3 with the usual four rows of setae. Femora brownish to blackish, with only thin greyish tomentum. Femoral pile mainly yellowish. Tibiae yellowish brown with slightly darkened tips. Tarsal segments also yellowish brown with darkened tips.

Abdomen. Tergites mainly brownish black and subshining. Tergites 2–3 or 2–4 with the postero-lateral corners gradually becoming more greyish tomentose, but never with any sharply demarcated pattern. Hind-marginal seams yellowish and very distinct on tergites 2–4 (*segmentata*). This yellowish colour may spread out on the extreme lateral margins of the



Figs 408–416. Male terminalia of *Thereva s. seminitida*. 408, genitalia in lateral view; 409, right gonocoxite in intero-ventral view; 410, epandrium in dorsal view; 411, epandrium in ventral view; 412, aedeagus in dorsal view; 413, aedeagus in lateral view; 414, apex of aedeagus in ventral view; 415, sternite 8; 416, tergite 8.

Figs 417, 418. Aedeagus of *Thereva chillaloensis*, holotype. 417, lateral view; 418, dorsal view. Scale: 0·5 mm.

tergites, but in a strict dorsal view the lateral yellowish colour cannot be seen. Sternites reddish yellow to greyish black. Abdominal pile moderately long and yellowish, only darker on the disc of the first tergites.

Terminalia (Text-figs 408–416). Yellowish brown and with yellowish pile. Epandrium (Text-fig. 410) typical for the genus, i.e. short and with two lateral sclerites on underside. Gonocoxite (Text-fig. 408) with an almost truncate posterior margin, with a moderately long projection below. Distal end of dorsal gonocoxal process overhanging posterior margin of epandrium. Stylus (Text-fig. 409) of a featureless shape. Phallus in lateral view (Text-fig. 413) gently down-curved, its tip slightly up-curved. In dorsal view (Text-fig. 412), phallus gradually narrowing towards the very slender tip. Proximal part of dorsal apodeme quite linear in lateral view, i.e. not arched; distal part down-curved. In dorsal view (Text-fig. 412), dorsal apodeme subrectangular proximally, then suddenly narrowing into a rounded tip. Ejaculatory apodeme very slender and long. Tergite 8: Text-fig. 416. Sternite 8: Text-fig. 415.

Total length 7·2–7·9 mm.

♀. *Head* (Text-fig. 361). Facial index about 1·00. Frons mainly brownish tomentose, more greyish brown tomentose below. Middle of frons with a depressed area, and in front of this with a more or less distinct, narrowly transverse, blackish band which reaches from eye-margin to eye-margin but may be divided along middle. Rest of head as in male, but post-ocular setae shorter and fewer in number.

Thorax. Mesonotum mainly coloured as in male, but sometimes with a narrow darker brownish mid line, and sometimes also with the two brownish stripes paler. Mesonotal pile shorter.

Wings and *legs* as in male, but veins often surrounded by more intense dark brownish infuscations.

Abdomen with tergites mainly polished black, with postero-lateral corners of tergites 2–3 to 2–7 greyish tomentose or brownish yellow and untomentose. Distinct hind marginal seams on at least tergites 2–3. Lateral margins of the posterior tergites in particular sometimes distinctly yellowish brown. Sternites distinctly yellowish brown translucent all over, but greyish tomentose on the first sternites. Pile on tergite 4 and the following tergites erect and black, on sternites 2–5 and lateral parts of tergites 2–3 erect and yellowish, and on disc of tergites 2–3 black and adpressed. 7 + 7 terminal spines which are short, slender and rather sharply pointed.

Total length 8·9–9·9 mm.

Remarks. The species is widespread in the highlands of Africa, and can be divided into three subspecies.

Thereva seminitida seminitida Becker

Thereva seminitida Becker, 1909 : 115; Kröber, 1912 : 406; Kröber, 1929 : 423; Kröber, 1931 : 133. Holotype ♀, Kenya (MP) [examined].

Thereva segmentata Speiser, 1910 : 81; Kröber, 1912: 400; Kröber, 1931 : 132. Holotype ♀, Tanzania (NRS) [examined]. **Syn. n.**

Thereva striatifrons Kröber, 1913 : 263, Kröber, 1931 : 132; Kröber, 1939 : 395. Holotype ♀, Tanzania (MB, lost). **Syn. n.**

Diagnosis and Description. ♂. Mesonotum almost uniformly dull blackish brown, only laterally more greyish brown tomentose. Only 1 *sa* seta present, and *dc* seta absent. Wing with vein R_4 beginning straight and terminating in a deep curve. Cross-veins and fork of R_{4+5} slightly infuscated. Setae of f_3 uniserially arranged. Sternites very pale, nearly all reddish yellow, only slightly greyish on lateral parts of first sternites.

♀. Blackish frontal band more distinct than in the following two subspecies. Only tergites 2–3 or 2–4 with greyish tomentose postero-lateral corners.

DISTRIBUTION. The subspecies seems restricted to the highlands of Kenya and Tanzania. It is recorded from 'montane forest', 'Podocarpus-bamboo zone' and 'prairie subalpine'.

MATERIAL EXAMINED.

Holotype ♀ of *seminitida*, KENYA: Escarpment, ix. 1906 (*Maurice de Rothschild*) (MP). Holotype ♀ of *segmentata*, TANZANIA: Kilimanjaro, 1905–06 (*Sjöstedt*) (NRS); the holotype has lost the left wing and parts of the legs, and the mesonotum is rubbed bare, but the specimen can be easily identified as conspecific with *seminitida*.

KENYA: Chyulu Hill, 1675–1825 m, 4 ♂, 2 ♀, v–vii. 1938 (*Coryndon Museum Exp.*) (BMNH & ZMC); Naivasha, 1 ♂, 2 ♀, vii. 1937 & vii. 1940 (*H. J. Turner*) (BMNH); Athi, 1 ♂, vi. 1941 (*van Someren*) (BMNH); Nairobi, 1 ♂, vii.1937 (*van Someren*) (BMNH); Mt Kenya, W. side, 2440 m, 1 ♂, 26.xii.1969 (*M. E. Irwin & E. S. Ross*) (MEI); 22 km NE. Nakuru, montane forest, 2300 m, 1 ♀, 26. xii. 1969 (*M. E. Irwin & E. S. Ross*) (MEI); Karen, 1770 m, 1 ♀, 21.xii.1969 (*M. E. Irwin & E. S. Ross*) (MEI); Ngong Hills, 1 ♀, ii. 1940 (*van Someren*) (BMNH); Meru, 1 ♀, vii. 1943 (*van Someren*) (BMNH); Ngong, 1 ♀, x. 1943 (*van Someren*) (BMNH); Rift Escarpment, Nakuru Road, 1 ♀, 21.i.1968 (*J. W. Boyes*) (BMNH). TANZANIA: Mt Meru, Olkokola, versant NO, 2500–2600 m, 1 ♂, 2 ♀, 3–8.vii.1957 (*P. Basilewsky & N. Leleup*) (MCT); Mt Meru, Momella, 1 ♀, 10–19.ii.1964 (*W. Forster*) (ZSM); Mt Meru, 1800 m, 1 ♀, 21.vi.1962 (CNC); Kilimanjaro, Moshi-Marangu, 1 ♂, 30.viii.1894 (*Kretschmer*) (ZMB); Shira Plateau, Kilimanjaro, 1 ♀, 4.vii.1970 (*Studenterrådets studierejse*) (ZMC); Mt Hanang, vers. Sud, 2900–3200 m, subalpine meadow, 1 ♀, 23.v.1957 (*P. Basilewsky & Leleup*) (MCT); Paré Mt, 1 ♀, 30.v.1963 (*G. Heinrich*) (CNC); Darma, 1 ♀, xii. 1905 (*Dr Schröder S.G.*) (ZMB).

Thereva seminitida occidentalis subsp. n.

[*Psilocephala chapini* Curran sensu Vanschuytbroeck, 1950 : 21. Misidentification.]

DIAGNOSIS AND DESCRIPTION. ♂. The description of the nominate subspecies, *seminitida seminitida*, also fits subsp. *occidentalis* in all details, except for three characters: *dc* setae present, 2 *sa* setae on each side, and *av* setae of f_3 biserial in basal half.

♀. With the same differences in thoracic chaetotaxy as given above for the male. In addition, frons slightly narrower in subsp. *occidentalis* than in subsp. *seminitida*, and frontal transverse band less distinct (as in subsp. *stuckenbergi*). Mesonotum paler greyish brown and with paler stripes, and tergites 2–7 distinctly greyish tomentose along posterior margin. Wings almost uniformly greyish brown, without distinct infuscations.

REMARKS. The holotype and the two paratypes listed from Zaire were all identified by P. Vanschuytbroeck in 1950 as *Psilocephala chapini* Curran, and this incorrect identification was published by Vanschuytbroeck (1950 : 21). The female paratype from Ruanda in the Berlin Museum was labelled 'Thereva ruandana Grünberg/Type'. However, no description has ever been published, and the name is a MS name.

Distribution. Recorded from mountainous regions in Nigeria in the west, through Zaire (Belgian Congo) to Ruanda and Uganda in the east. All recorded altitudes are over 1700 m.

Material examined.

Holotype ♀, Zaire ('Congo belge'): P.N.A., Nyarusambo (Kikere), 2226 m, 28–29.vi.1934 (*G. F. de Witte*) (IPNB).

Paratypes. Zaire ('Congo belge'): vers. Rweru, volc. Mikeno (Bambous), 2400 m, 1 ♀, 3.vii.1934 (*G. F. de Witte*) (PNB); Kivu, Ando, 1 ♂, 20.vii.1935 (*Dr H. Damas*) Park. Nat. Albert (PNB). Rwanda: Karissimbi, Südfuss, 2700 m, 1 ♀, 4.viii.1911 (*H. Mayer S.G.*) (ZMB). Uganda: Ruwenzori Range, Namwamba Valley, 1970 m, 1 ♀, xii. 1934–i. 1935 (*F. W. Edwards*) B.M.E. Afr. Exp. (BMNH). Nigeria: Mambilla Plateau, Ngel Nyaki, montane forest ca 1700 m, 1 ♀, 28.xi–3.xii.1968 (*J. C. Deeming*) (BMNH).

Thereva seminitida stuckenbergi subsp. n.

Diagnosis and description. ♂. Stronger and more broadly built than the nominate subspecies from Kenya and Tanzania. Upper facets slightly more enlarged. 2 *sa* setae, and *dc* setae also present (as in *seminitida occidentalis*). Mesonotum with a darker (almost blackish) and more shining appearance. Vein R_4 more gently curved. Basal and anterior parts of wing strongly brownish infuscate with dark brownish streaks, and also some of the veins, especially those surrounding discal cell. The one f_2 has an *av* seta. Chaetotaxy and colour of legs otherwise as in the nominate subspecies, but tibiae and tarsi darker at tips. Tergites blackish, with only small grey tomentose areas at lateral corners of tergites 2–3. Lateral parts of tergites not yellowish brown translucent as in *s. seminitida*, and sternites entirely greyish black. Terminalia hardly distinguishable from those of the nominate subspecies; aedeagus perhaps slightly more strongly curved in lateral view. Both epandrium and gonocoxites brownish black with blackish hairs. Total length about 9 mm.

♀. Frons with the same dark brownish grey tomentum, and with a narrow, vaguely delimited blackish band on middle as in the nominate subspecies, but antennae shorter and proboscis and palpi also shorter. Mesonotum as in male with 2 *sa* and 1 *dc* setae. Femora not always entirely black, but more or less brownish in some specimens, especially on ventral surface. Tergites entirely blackish brown to black and shining, as in *s. seminitida*, lateral corners of tergites 2–4 paler brownish yellow, but not at all tomentose. Total length about 10 mm.

Distribution. Known only from the mountainous districts of Lesotho and the Natal province of South Africa. There is a wide gap in distribution between *seminitida stuckenbergi* and the nominate subspecies, which occurs in Kenya and Tanzania. The third subspecies, *seminitida occidentalis*, extends from Uganda and Ruanda through Zaire to Nigeria.

Material examined.

Holotype ♂, Lesotho: Makkapung Dip., 2440 m, 23.i.1955 (*L. Bevis*) (NM).

Paratypes. South Africa: Natal, Kranskop, 2830 m, 2 ♀, xi. 1964 (*B. Stuckenberg*) (NM & ZMC); Natal, Drakensberg, Giants Castle Res., 1770 m, 1 ♀, 18–23.ix.1961 (*B. & P. Stuckenberg*) (NM); Natal, Royal National Park, Drakensberg Mts, 1500 m, on stones in river bed, 1 ♀, 12.ix.1963 (*B. & P. Stuckenberg*) (NM).

Thereva chillaloensis sp. n.

(Text-figs 362, 366, 417, 418)

Diagnosis. ♂. Extremely difficult to separate from *s. seminitida* in the afro-alpine areas of Kenya and Tanzania. Colour differences are given in the key, but they may not be constant. The aedeagus of *chillaloensis* (Text-fig. 417) has a remarkable tubercle on the dorsal apodeme. *T. tuberculifrons*, also found in Ethiopia, has an aedeagus of rather similar appearance (Text-fig. 423), but possesses *dc* setae and has a more greyish tomentose abdomen.

♀. Easily recognized in the group by possessing two conspicuous, ovoid, shining black frontal calli (see Tex-fig. 362). Otherwise very similar to the female of *s. seminitida*.

Description. ♂. *Head* (Text-fig. 366). Facial index about 1·17. Eyes touching for a short distance. Proboscis rather short and not reaching to level of antennal bases. Palpi shorter than proboscis, dark greyish and with whitish hairs. Upper frons blackish, lower frons dark greyish tomentose. Rest of head whitish grey tomentose. Pile on frons long and black. Black hairs present on upper lateral part of face; rest of face with whitish pile, as on genae and occiput. Post-ocular setae long and very thin, about 25 on each side. A few hair-like occipital setae. Antennae blackish, greyish tomentose on first two segments. Pile on first segment moderately long and consisting of both whitish and black hairs.

Thorax. Mesonotum rather pale, brownish grey with two narrow indistinct paler stripes and a dark brownish mid line. Pile long and consisting of black and pale yellowish hairs. 1 *sa* on each side. *Dc* setae absent. Scutellum greyish brown with pale hairs. Pleura greyish with pale hairs.

Wings. Cell M_3 open in holotype, short-petiolate in paratype. Vein R_4 gently S-curved. Colour greyish hyaline with a brownish tinge. Infuscate areas, if present, at most very indistinct. Stigma indistinct. Veins and halteres blackish brown.

Legs. Front legs lost. F_2 without *av* setae. F_3 with a row of 4–6 rather long *av* setae. Femora blackish brown with thin greyish tomentum and pale hairs. Tibiae and metatarsi yellowish brown. Rest of tarsi blackish brown.

Abdomen. Seen from above, tergites blackish brown and shining, with narrow brownish hind marginal seams and extreme postero-lateral corners greyish tomentose. Seen from the side, the lateral areas of all tergites greyish tomentose. Sternites greyish tomentose and with broad, brownish yellow hind-marginal seams. Pile long and whitish on sternites and lateral parts of tergites, shorter and blackish on disc of tergites.

Terminalia (Text-figs 417, 418). Epandrium and gonocoxites brownish black. Epandrium with mainly black hairs, the gonocoxites with yellowish hairs. Structure of epandrium and gonocoxites in external view as in *tuberculifrons* (Text-figs 419–421). Epandrium, tergite 8 and sternite 8 also as figured for *tuberculifrons*. Aedeagus (Text-figs 417, 418) similar to the aedeagus of *tuberculifrons*, but phallic part shorter and more strongly curved, and dorsal apodeme with a remarkable tubercle.

Total length 8·3 mm.

♀. *Head* (Text-fig. 362). Facial index about 1·02 . Frontal stripe with two well-separated frontal calli which are ovoid and moderately arched. Rest of frons brownish grey tomentose. Other parts of head as in male, but only about 6–8 short post-ocular setae.

Thorax. Mesonotum more distinctly striped. The pattern formed by three brownish grey or greyish black bands separated by paler yellowish grey stripes which are broadly confluent on posterior third of mesonotum. Along the mid-line with a narrow dark brownish line which is most distinct posteriorly and continues on to scutellum. 1 pair of *dc* setae usually present.

Wings and *legs* as in male, but f_1 and/or f_2 may have one or two small *av* setae, or these are absent as in the male.

Abdomen in dorsal view with same pattern as in the male. Sternites variable in colour, in some specimens extensively yellowish brown and only greyish anteriorly on the first two sternites, in other specimens intensely greyish all over. 7 + 7 terminal spines which are rather short and blunt-tipped.

Total length 8·6–9·2 mm.

DISTRIBUTION. Probably restricted to the high mountainous regions of Ethiopia.

MATERIAL EXAMINED.

Holotype ♂, ETHIOPIA: 'Abyssinia', Digalla, Mount Chillálo, ca 2900 m, 26.xi.1926 (*Dr H. Scott*) (BMNH).

Paratypes. ETHIOPIA: same data as holotype, 1 ♂, 3 ♀ (BMNH & ZMC); Abyssinia, Wolamo Prov., Mt Damota, over 3000 m, from grassy slopes on summit and near spring, 1 ♀, 5.xi.1948 (*Hugh Scott*) (BMNH).

Thereva tuberculifrons Kröber

(Text-figs 363, 367, 419–425)

Thereva tuberculifrons Kröber, 1913 : 264; Kröber, 1931 : 130. LECTOTYPE ♂, ETHIOPIA (USNM), here designated [examined].

DIAGNOSIS. ♂. Proboscis of normal length, though hardly reaching to antennal bases. *Dc* setae present, and 1 *sa* seta on each side. All tergites greyish tomentose on posterior parts, but not forming very distinct bands. Posterior tergites mainly greyish tomentose, though rather dark. Aedeagus (Text-fig. 423) with a tubercle on dorsal apodeme, but not as clearly set-off as in *chillaloensis* (Text-fig. 417).

♀. Frons (Text-fig. 363) with a shining black callus formed by two strongly protruding areas which are broadly connected. Tergites entirely black.

REDESCRIPTION. ♂. *Head* (Text-fig. 367). Facial index about 1·00. Eyes practically touching for a short distance. Upper facets slightly enlarged. Proboscis not reaching to level of antennal bases. Palpi distinctly shorter than proboscis, greyish brown and with pale hairs. Upper parts of frons blackish brown, lower part brownish grey tomentose, becoming paler greyish below. Face, genae and occiput whitish grey tomentose. Pile on frons and lateral parts of face long and black, on middle of face with dirty whitish yellow hairs. Genae and occiput with whitish yellow hairs, but with black hairs intermixed on genae and lower occiput. Post-ocular setae long, thin and numerous, about 20 on each side. Only a few occipital setae. Antennae brownish black to black, palest at base of segment 3. First two segments with greyish tomentum, and pile on first segment moderately long and consisting of both black and pale hairs.

Thorax. Mesonotum dark brownish, with two indistinct paler greyish brown stripes, and lateral parts also greyish brown. Mesonotal pile long and consisting of black and yellow hairs. Only 1 *sa* seta on each side. 1 pair of *dc* setae. Scutellum dark brownish with yellowish hairs. Pleura thinly greyish tomentose and with pale hairs.

Wings. Cell M_3 closed and short-petiolate. Vein R_4 gently S-curved. Practically uniformly greyish brown in colour, without distinct infuscations; veins dark brownish. Halteres blackish.

Legs. F_1 and f_2 without *av* setae. F_3 with 5–6 strong *av* setae along the entire length. Tibiae with chaetotaxy as in *seminitida*. Femora black, with slight grey tomentum and mainly pale hairs. Tibiae brownish, tips darkened. Tarsi blackish except for most of metatarsi which are brownish.

Abdomen. Tergites brownish black and shining on anterior part, more greyish on posterior part, but not distinctly banded. Hind marginal seams dirty yellowish. Extreme lateral margin of basal tergites and all of sternites yellowish brown, but sternites sometimes greyish tomentose. Tergal pile long and predominantly whitish yellow laterally, but disc of the broad tergites with short, black, adpressed hairs. Sternal pile whitish yellow.

Terminalia (Text-figs 419–425). Epandrium and gonocoxites brownish to blackish with grey tomentum. Pile consisting of black and pale hairs. Epandrium (Text-fig. 421) typical

for the genus. Gonocoxite (Text-fig. 419) with a moderately long projection below. Distal end of dorsal gonocoxal process overhanging posterior margin of epandrium and characteristically truncate apically. Stylus (Text-fig. 420) rather short and broad. Ventral lobe (Text-fig. 420) long and spoon-shaped. Phallus in lateral view (Text-fig. 423) long, slender and gradually curved; in dorsal view (Text-fig. 422) rather broad proximally, then becoming suddenly narrower. Dorsal apodeme (Text-fig. 423) truncate apically and with a short 'tail'; in dorsal view (Text-fig. 422) broadly ovate. Tergite 8: Text-fig. 424. Sternite 8: Text-fig. 425.

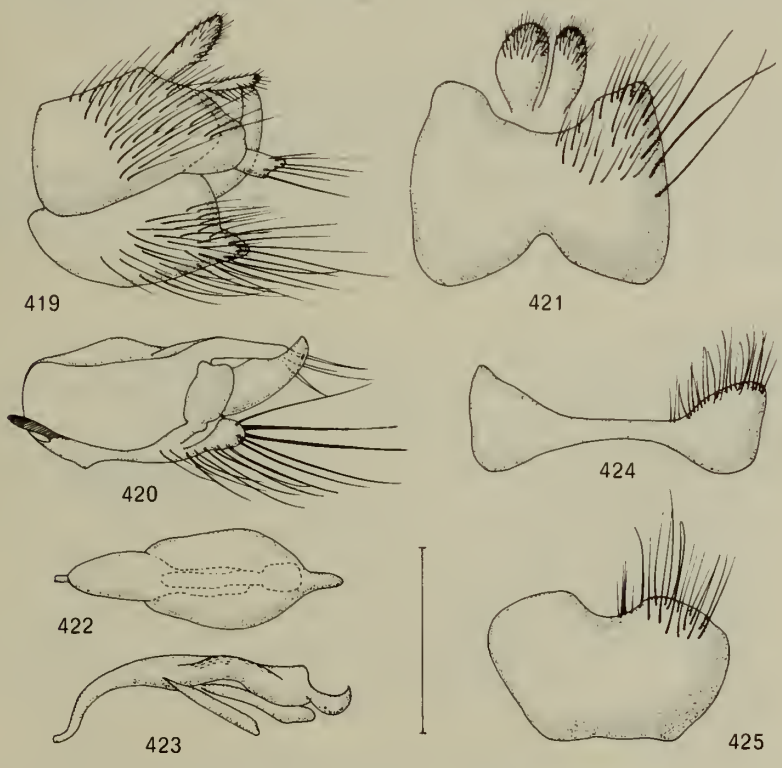
Total length 7·4–8·6 mm.

♀. *Head* (Text-fig. 363). Facial index about 1·05. Frons with a large shining black callus. This is formed by two strongly protruding circular areas which are broadly connected. Area above frontal callus dark brownish tomentose. Lower frons brownish grey tomentose. Other parts of head with colour and hairs as in male. Post-ocular setae fewer and shorter than in male. Antennae as in male.

Thorax, *wings* and *legs* as in male, but mesonotal pile shorter and scutellum paler.

Abdomen with all tergites entirely black and shining, with narrow yellowish hind-marginal seams on tergites 2–4. Anterior parts of sternites 2–5 brownish black, but posterior parts yellowish brown. Posterior sternites entirely yellowish brown.

Total length 10·6 mm.



FIGS 419–425. Male terminalia of *Thereva tuberculifrons*, lectotype. 419, genitalia in lateral view; 420, right gonocoxite in intero-ventral view; 421, epandrium in dorsal view; 422, aedeagus in dorsal view; 423, aedeagus in lateral view; 424, tergite 8; 425, sternite 8. Scale: 0·5 mm.

Remarks. Kröber (1913 : 264) described *Thereva tuberculifrons* from a series of specimens from 'Abessinien, Wagira, Gara-Mutata Berge' and stated that the types (♂ and ♀) were in his own collection. As this has been destroyed, it seems justifiable to designate as lectotype an apparently syntypic male specimen labelled as 'cotype' 'Abessinia, Wagira' and 'Thereva tuberculifrons Kröb. det.', located in the U.S. National Museum. Two further syntypes, a male and a female, with the same labels as the lectotype, but with 'Type' instead of 'Cotype', are located in the Paris Museum. They have been labelled by me as paralectotypes. The lectotype is slightly crushed and has lost the left hind leg, but the colour is well preserved.

Distribution. Only known from the high mountains of northern Ethiopia.

Material examined.

Lectotype ♂, Ethiopia: 'Abessinia', Wagira, *Thereva tuberculifrons* Kröb. det. (USNM, cotype No.24230). Paralectotypes, Ethiopia: same data as lectotype, 1 ♂, 1 ♀ (MP).

Ethiopia: Simien, Lori, ca 3500 m, 1 ♂, 27.xi.1952 (*Hugh Scott*) (BMNH).

Thereva natalensis sp. n.

(Text-figs 368, 426–432)

Diagnosis. ♂. This and the following species, *capensis*, can be distinguished from other species of the *seminitida*-group by the short proboscis. *T. natalensis* is a smaller species, less than 7 mm in total length, with only 6–8 post-ocular setae, and has the mesonotum and most of the tergites brownish black, while lateral parts of the tergites and all the sternites are yellowish brown.

♀. Unknown.

Description. ♂. *Head* (Text-fig. 368). Facial index about 0·95. Eyes practically touching for rather a long distance in front of anterior ocellus. Upper facets enlarged. Proboscis short. Palpi as long as proboscis, greyish brown and with both pale and black hairs. Narrow triangle on upper frons dull brownish black. Rest of frons brownish grey tomentose above, becoming gradually more greyish white tomentose below. Frons with long black pile down to level of antennae. Face whitish grey tomentose and with exclusively whitish pile. Gena with a tuft of black hairs. Occiput whitish grey tomentose, but narrowly brownish on upper post-ocular margin. Post-ocular setae short and slender, only about 6–8 on each side. Only a few short and slender occipital setae. Occiput otherwise with whitish pile. Antenna short, brownish to brownish black, and with thin greyish tomentum on first two segments. Pile on first segment comparatively short and consisting of both blackish and whitish hairs.

Thorax. Mesonotum with three broad, conspicuous, brownish black bands, which are separated by two narrow paler brownish stripes, and also with posterior and lateral areas paler brownish to brownish grey. Pile moderately long and consisting of black and whitish yellow hairs. Scutellum brownish black. 2 *sa* setae on each side, 1 pair of *dc* setae present. Pleura greyish, with whitish pile.

Wings. Cell M_3 closed at wing-margin. Vein R_4 gently S-curved. Ground-colour rather intensely brownish, veins brownish black and surrounded by dark brownish shadows. Halteres brownish black.

Legs. F_1 and f_2 without *av* setae. F_3 with 6–8 *av* setae which are longer than usual in the genus and tend to be rather irregularly arranged; also with a few *pv* setae near apex. T_1

with 3–5 *ad*, *pd* and *pv* setae. T_2 and t_3 with rows of strong setae in all four positions; *pv* setae of t_3 also well-developed, and *ad* and *pd* setae of t_3 numerous. Femora brownish to almost blackish brown, with predominantly black adpressed hairs, at least on anterior apical surfaces. Tibiae and tarsi brownish to dark brownish.

Abdomen. In dorsal view tergites 2–4 with distinct whitish yellow hind-marginal seams. All tergites mostly brownish black and subshining, but the postero-lateral corners gradually becoming more greyish to greyish brown on tergites 2–3. Extreme lateral margin yellowish brown translucent, but this yellowish brown colour practically invisible in a strictly dorsal view. Sternites entirely yellowish brown. Pile moderately long and whitish yellow, only blackish on anterior dark areas of first tergites.

Terminalia (Text-figs 426–432). Yellowish brown, and with only pale hairs. Epandrium (Text-fig. 428) rather short. Gonocoxite (Text-fig. 426) broadly truncate posteriorly, with a short projection below. Distal end of dorsal gonocoxal process overhanging posterior margin of epandrium. Stylus comparatively short and stout. Phallic part of aedeagus (Text-fig. 429) rather gradually down-curved; in dorsal view (Text-fig. 430) gradually decreasing in width towards tip. Dorsal apodeme in dorsal view (Text-fig. 430) broad proximally, then narrowing rapidly into a slender distal projection. Tergite 8: Text-fig. 431. Sternite 8: Text-fig. 432.

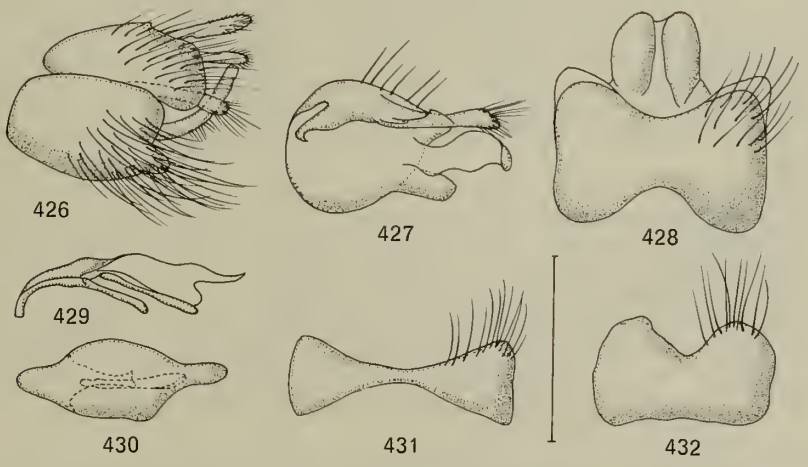
Total length 6·5–6·7 mm.

♀. Unknown.

MATERIAL EXAMINED.

Holotype ♂, SOUTH AFRICA: Natal, Karkloof, 4.ix.1960 (*B. & P. Stuckenberg*) (NM).

Paratypes. SOUTH AFRICA: same data as holotype, 3 ♂ (*B. & P. Stuckenberg*) (NM & ZMC); Natal, Drakensberg, 1780 m, Giants Castle Res., 1 ♂, 18–23.ix.1961 (*B. & P. Stuckenberg*) (NM); Natal, Pietermaritzburg Dist., Swartkop Location, 1 ♂, vii. 1959 (*B. & P. Stuckenberg*) (NM).



FIGS 426–432. Male terminalia of *Thereva natalensis*, holotype. 426, genitalia in lateral view; 427, right gonocoxite in interior view; 428, epandrium in dorsal view; 429, aedeagus in lateral view; 430, aedeagus in dorsal view; 431, tergite 8; 432, sternite 8. Scale: 0·5 mm.

Thereva capensis sp. n.

(Text-figs 367, 369. 433–439)

Diagnosis. ♂. With a short proboscis, as in *natalensis*. A larger species, more than 9 mm in total length, with at least 12 long and thin post-ocular setae.

♀. The very large polished black frontal callus, reaching to top of vertex (Text-fig. 364), separates this species from all other African species of *Thereva*.

Description. ♂. *Head* (Text-fig. 369). Facial index 1·00. Eyes practically touching for a short distance. Upper facets enlarged. Proboscis short and slender; its length equal to only half the distance from antennal bases to base of proboscis. Palpi slightly shorter than proboscis, slender, greyish yellow and with whitish yellow pile. A rather large area on upper frons blackish, rest of frons and other parts of head greyish yellow to whitish grey tomentose. Frons and face with long black pile, with many whitish yellow hairs intermixed on lower face. Genae with a group of black hairs. Occiput entirely covered with whitish yellow pile; post-ocular black setae long and thin, at least 12 setae present on each side. Antenna slender. First, second and base of third segment brownish to brownish black, first segment with pale greyish tomentum. Rest of third segment and style blackish.

Thorax. Mesonotum brownish black and subshining, with two narrow and very indistinctly paler stripes, and lateral areas also paler greyish. Scutellum brownish black. Mesonotal pile consisting of long, erect, black hairs and shorter and more adpressed, yellowish hairs. Scutellar pile wholly yellowish. Pleura pale greyish with whitish yellow pile. 2 *sa* and 1–2 *dc* setae present.

Wings. Cell M_3 closed. Vein R_4 gently curved along its entire length. Ground-colour brownish grey, stigma and veins brownish black. Cross-veins and fork of R_{4+5} with distinct brownish infuscations.

Legs. F_1 without *av* setae. F_2 with 1–3 *av* setae. F_3 with a row of up to 8 *av* setae along entire length. T_1 with 3–4 strong *ad*, *pd* and *pv* setae. T_2 and t_3 with rows of setae in all four positions, but *pv* setae of t_3 short. Femora blackish grey and with mainly whitish pile. Tibiae brownish, only indistinctly darkened apically. Tarsi mainly brownish black, but more brownish basally on basal segments.

Abdomen. Tergites 2–5 with broad, blackish anterior bands which are sub-shining and occupy at least three-quarters of total tergal length along the mid line, but do not reach actual margins of tergites, thus strongly narrowed laterally. All tergites with rather broad, pale yellowish hind marginal seams. Postero-lateral corners of all tergites clearly yellowish brown translucent, these yellowish brown areas visible in dorsal view. Sternites entirely yellowish brown, but slightly darkened by greyish tomentum, especially on lateral parts of anterior sternites. Abdominal pile moderately long and whitish yellow, only blackish on the blackish tergal bands.

Terminalia (Text-figs 433–439). Yellowish brown, epandrium with long black pile, gonocoxite with long pile consisting of mixed black and pale hairs. Epandrium (Text-fig. 434) as typical for the genus. Gonocoxite (Text-fig. 433) with a finger-like projection on posterior margin. Dorsal gonocoxal process overhanging posterior margin of epandrium. Stylus (Text-fig. 435) comparatively short and stout. Phallic part of aedeagus in lateral view (Text-fig. 436) slender and gently down-curved, the actual tip up-curved. In dorsal view (Text-fig. 437) proximal part of phallus half as broad as dorsal apodeme, then gradually decreasing in width towards the very narrow tip. Dorsal apodeme (Text-fig. 436) down-curved distally, in dorsal view (Text-fig. 437) with distal margin pointed. Tergite 8: Text-fig. 438. Sternite 8: Text-fig. 439.

Total length 9·0–10·7 mm.

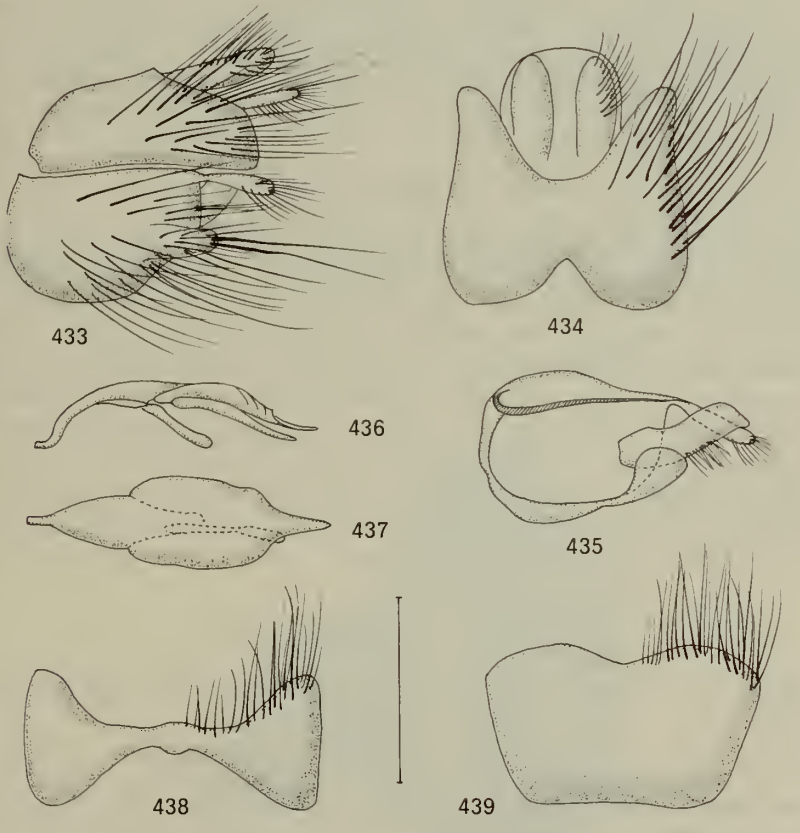
♀. *Head* (Text-fig. 364). Facial index about 1·13. Frons with a large, polished black callus which reaches to vertex and thus covers the areas laterad of the ocellar callus as well. Callus separated from ocular margin by brownish tomentose stripes of varying widths; its anterior margin almost straight, with a sharply pointed incision. Anterior part of frons pale

brownish grey tomentose. Rest of head whitish grey tomentose, upper part of occiput with a brownish tinge. Middle of face with two narrow polished black stripes which may be almost confluent in some specimens. Lower frons with rather short black pile. Rest of head with whitish pile, but genae with a group of black hairs. 5–8 rather short post-ocular setae on each side and a larger number of occipital setae. Otherwise as in male.

Thorax. Mesonotum with distinct stripes. Pattern consisting of a brownish black median band, which is separated from the two lateral brownish black bands by rather broad, brownish grey stripes. Anterior and lateral parts of mesonotum also greyish brown to pure greyish. Mesonotal pile moderately long and consisting of erect black hairs and adpressed pale hairs. Scutellum mainly greyish brown, blackish brown only on a central area. Pleura and chaetotaxy as in male.

Wings as in male, but cell M_3 sometimes narrowly open.

Legs. Chaetotaxy as in male, but f_1 sometimes with a single *av* seta. Femora differently coloured from male: their colour not constant, sometimes almost entirely brown, but usually more or less irregularly darkened, especially apically and dorsally. Tibiae and tarsi as in male.



FIGS 433–439. Male terminalia of *Thereva capensis*, holotype. 433, genitalia in lateral view; 434, epandrium in dorsal view; 435, right gonocoxite in intero-ventral view, hairs omitted; 436, aedeagus in lateral view; 437, aedeagus in dorsal view; 438, tergite 8; 439, sternite 8. Scale: 0·5 mm.

Abdomen. Main pattern as in male, i.e. with large blackish anterior bands on tergites 2–6. Between these bands and the yellowish hind marginal seams with a stripe of pale greyish tomentum, which does not cover the distinct yellowish brown colour on postero-lateral corners of tergites. Unlike in the male, this yellowish brown colour can also be seen in strictly dorsal view. Tergites 7–8 brownish and shining. Abdominal pile short, consisting of adpressed black hairs on discs of tergites 2–5, of erect whitish hairs laterally on tergites 1–3 and of erect black hairs on posterior tergites. 7 + 7 terminal spines which are rather long, broad and blunt-tipped.

Total length 9·8–11·4 mm.

DISTRIBUTION. Apparently restricted to the Cape Province of South Africa and obviously a strictly coastal species there.

MATERIAL EXAMINED.

Holotype ♂, SOUTH AFRICA: Cape Prov., Mossel Bay, 15–28.iii.1922 (*R. E. Turner*) (BMNH).

Paratypes. SOUTH AFRICA: same locality as holotype, 1 ♂, 1 ♀, 1–13.iii.1922; 1 ♂, 1 ♀, 15–28.iii.1922; 1 ♂, 1 ♀, iv. 1921 (*R. E. Turner*) (BMNH & ZMC); Cape Prov., Cape Peninsula, Hout Bay, Skoorsteenskop, 3 ♂, 21 ♀, 21.i–18.ii.1951 (*Brinck & Rudebeck*) (ZIL, ZMC & MEI); Cape Prov., Plettenberg Bay, 3 ♀, 14.iii.1968 (*Paul J. Spangler*) (USNM & ZMC); Cape Prov., Cape Good Hope Nature Reserve, 3 ♀, 7–10.iii.1968 (*Paul J. Spangler*) (USNM & ZMC).

Thereva sp. near ***bipunctata*** Meigen, 1820

A male labelled 'W. Aden Prot., Jebel Yihaf, in cultivated fields, ca 7100 ft, ix. 1937 (*H. Scott & E. B. Britten*)' (BMNH) and a female labelled 'S. Arabia, Mukeiras, 7200 ft, 16.v.1967 (*K. M. Guichard*)' (CJG) belong to a species which is not represented in material from the African part of the Ethiopian region. This species is closely related to *bipunctata* Meigen. Both sexes are characterized by the presence of *pv* setae at the base of f_3 and in the female sex by two separated, rounded, shining black frontal calli. The *bipunctata*-subgroup contains a number of species in the Mediterranean subregion, which are only imperfectly known. It is probably one of these Mediterranean species which penetrates south to Southern Yemen and Saudi Arabia, but its status would be better resolved within the framework of a revision of the Mediterranean fauna.

CAENOPHTHALMUS Kröber

Caenophthalmus Kröber, 1931 : 128. Type-species: *Caenophthalmus bellus* Kröber, 1931, by monotypy.

DESCRIPTION. *Head.* Male eyes touching or practically touching for a shorter or longer distance. Eye facets of equal size. Face relatively wide, facial indices between 0·90 and 0·97, i.e. distance between lower eye-margins 90–97 per cent of height of head. Frons and face in both sexes with a long pile. On genae a tuft of black hairs, and also occiput with long pile. Female frons very wide, partly due to a strong reduction of the eyes (Text-fig. 440). Female frons without calli, but upper part often of a darker colouration due to brownish tomentum. Post-ocular setae in male numerous, long and thin; in female few and short. Occipital setae usually absent in the male, whilst a few occipital setae may be present in the female. Proboscis

shorter or longer, rather narrow and with comparatively small labellae. Palpi vermiform, about half as long as proboscis, yellowish and with a long whitish pile. Antennae (Text-fig. 440) very uniform in shape, first segment being slightly incrassate, while segment 3 has a distinct constriction basally. The antennae thus appear 4-segmented exclusive of the style, and this appearance is strengthened by the fact that the basal section of segment 3 is coloured as segment 1 and 2 and strongly contrasts to the black apical section. Style with two sections, the two sections being of varying length; apically a slender spine.

Thorax. Mesonotum with 3 notopleural, 1–2 supraalar and 1 postalar setae. 0–2 dorsocentral setae. Scutellum with 2–4 setae; additional lateral setae may be present. Prosternum with long hairs on whole surface. Sternopleuron with long hairs on most of its surface.

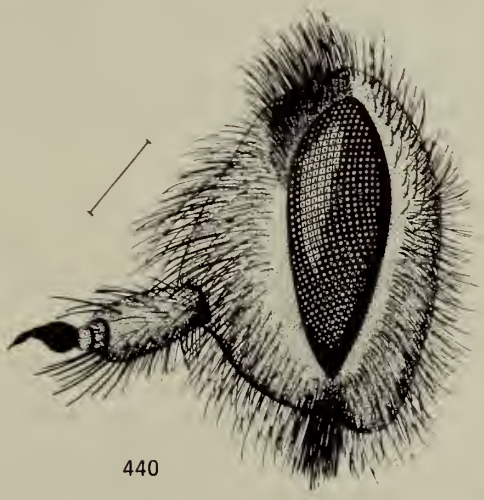
Wings. Cell M_3 usually short petiolate. Cell R_4 relatively wide towards apex, about twice as long as wide between tips of veins R_4 and R_5. Wings often spotted by areas of dark microtrichia. A very distinct stigma is present.

Legs. Cx_1 and cx_2 with long hairs on both anterior and posterior surfaces. F_1 without setae. F_2 with 1 anteroventral seta and sometimes 1 anterodorsal seta near apex. F_3 with several anteroventral setae, and a few anterodorsal and posteroventral setae at apex. T_1 with rows of anterodorsal, posterodorsal and posteroventral setae. T_2 and t_3 with rows of setae in all four positions. Femoral pile usually long and dense. Tibial pile also long and dense, usually as long as the setae, and tibiae may be slightly incrassate.

Abdomen. The shape is as in a typial *Thereva*, i.e. more or less conical, and bearing a long pile in the males, whereas the female abdomen is shorter haired. Tergites nearly totally black or at least with distinct blackish anterior bands. These are usually widest laterad of mid line, a character distinct from *Thereva*.

Male terminalia. Epandrium, as in *Thereva*, always broader than long in mid line. Cerci normal but long. Paraproct continuing into a comparatively well sclerotized intersegmental membrane (cf. the *Thereva turneri*-group). Gonocoxite with a pointed projection posteriorly. Distal end of dorsal gonocoxal process long, overhanging posterior margins of both epandrium and gonocoxite. Stylus and ventral lobe well developed. Hypandrium present as a free narrow sclerite between the ventral part of gonocoxites. Aedeagus simple, phallic part comparatively long, narrow and straightly down-curved. Dorsal apodeme distinctly incurved distally.

REMARKS. The genus *Caenophthalmus* is represented by five species in the Cape



440

FIG. 440. *Caenophthalmus bellus*, head in lateral view of ♀ holotype. Scale: 0·5 mm.

Province, South Africa, and it is probably restricted to that area. The species seem to be associated with both inland and coastal dune systems.

The genus is clearly monophyletic, the best apomorphic character being the partial reduction of the eyes in the female (Text-fig. 440). Another apomorphic character is the secondary false segmentation of the third antennal segment. Similar conditions occur also in the *Thereva turneri*-group (cf. Text-figs 359–360) and this group can probably be motivated as the sister-group to *Caenophthalmus*. Also the structure of the male terminalia (paraproct, dorsal apodeme) points in that direction.

Key to Species of *CAENOPHTHALMUS*

Males

1 Tergites 2–7 with whitish grey tomentose posterior bands, each band occupying at least half of the tergite. *Dc* setae absent. Proboscis short and not reaching to level of antennal bases 2

– Tergites 2–7 largely black, at most with triangular whitish grey tomentose spots on posterior margins. *Dc* setae present in 1–2 pairs. Proboscis longer, reaching to or beyond level of antennal bases 3

2 All femora blackish grey and with exclusively whitish pile. Tibiae slender and with exclusively whitish pile. Apical part of wing spotted with areas of dark microtrichia ***gracilis*** (p. 341)

– F_3 largely yellowish brown, and f_1 and f_2 yellowish brown in apical half or so. Tibiae incrassate and with mixed blackish and whitish pile as on femora. Apical part of wing not distinctly spotted . . . . . ***similis*** (p. 343)

3 Tergites 4–7 with very distinct whitish grey tomentose triangular spots, the height of which corresponds to half or more of tergal length. Mesonotum with two very distinct whitish grey stripes which are drop-shaped dilated posteriorly. ***capensis*** (p. 339)

– Tergites 4–7 with indistinct and smaller greyish tomentose triangular spots, or practically all black. Mesonotum distinctly striped, but stripes of a more greyish brown colouration and not so distinctly dilated posteriorly 4

4 Frons largely with whitish pile, only a couple of rows of black setae above. Eyes touching for a distance equal to twice the height of ocellar triangle. Smaller species, 7–9 mm in total length . . . . . ***irwini*** (p. 340)

– Frons largely with blackish pile, only area above antennal bases with whitish pile. Eyes touching for a distance equal to height of ocellar triangle. Larger species, 9·5–10·0 mm in total length . . . . . ***bellus*** (p. 337)

Females

(Female of *similis* is unknown.)

1 One pair of scutellar setae. *Dc* setae absent. Tergites 3–7 largely whitish grey tomentose, with narrow, parallel-sided, blackish anterior bands. Wings very strongly spotted . . . . . ***gracilis*** (p. 341)

– Two or more pairs of scutellar setae. *Dc* setae usually present. Tergites 3–7 with broader black anterior bands which are semicircularly widened laterad of mid line. Tergites also extensively whitish grey tomentose posteriorly 2

2 Proboscis relatively short, not approaching level of apex of first antennal segment. Mesonotum indistinctly striped, stripes being brownish grey . . . ***irwini*** (p. 340)

– Proboscis long, reaching to level of apex of first antennal segment. Mesonotum more distinctly striped, at least drop-shaped posterior part of paler stripes well-marked, whitish grey . . . . . ***bellus*** (p. 337) and ***capensis*** (p. 339)

Caenophthalmus bellus Kröber

(Text-figs 440–447)

Caenophthalmus bellus Kröber 1931 : 128. Holotype ♀, South Africa (TM) [examined].

Diagnosis. ♂. As in *capensis* and *irwini* with distinct *dc* setae and tergites largely black, at most with indistinct greyish tomentose triangular spots on posterior tergites. Mesonotum distinctly striped, frons largely with black pile and eyes touching for a rather short distance. The largest species of the genus, 9·5–10·0 mm.

♀. Very similar to ♀ of *capensis*. Both species have a distinctly striped mesonotum, the stripes being drop-shaped dilated posteriorly, a long proboscis, *dc* present, and 2 pairs or more of *sc* setae.

Redescription. ♂. *Head* (Text-fig. 440). Facial index 0·94. Proboscis reaches to level of middle of or to apex of first antennal segment. All parts of head whitish grey tomentose. Pile of frons and face very long and dense. The hairs are blackish on upper part of frons and on lateral parts of face, whitish on lower frons and central area of face, the differently coloured hairing being sharply demarcated. A group of dark coloured hairs on genae. Numerous (ca 100 on each side) fine and long black post-ocular setae. First, second and basal section of third antennal segments whitish grey tomentose; the rest of third segment and style black. First segment with strong black setae at apex and additional long whitish hairs on whole surface.

Thorax. Mesonotum with three marked subshining brownish black bands separated by two narrow greyish stripes which may be indistinct on middle. Also anterior and lateral parts greyish. Mesonotal pile long and composed of whitish and blackish hairs. Scutellum exclusively dark brownish and with long whitish and blackish hairs. Pleura greyish to greyish brown, with whitish pile. 1–2 *sa* and 1–2 *dc* setae. 4 *sc* setae, but additional marginal setae may occur.

Wings. Vein R_4 strongly S-curved. Colour whitish hyaline. Veins predominantly pale brownish, but darker brownish distally. Greyish shadows may occur around cross-veins, fork of vein R_{4+5} and less distinctly along distal portion of the veins. Halteres with blackish knobs.

Legs. F_2 with 1 *av* seta and usually 1 *ad* seta near apex. F_3 with 5–7 *av* setae in apical two-thirds, several *ad* setae in apical half, and 1–2 *pv* setae in apical half. T_1 with 3–5 *ad*, *pd* and *pv* setae. T_2 and t_3 with rows of long *ad*, *pd*, *av* and *pv* setae. All tibial setae strong and black, and tibiae have additional long and erect pile composed of both black and whitish hairs. Coxae pale greyish. Femora predominantly yellowish brown, f_1 and f_2 blackish grey on dorsal surfaces and also greyish tomentose on ventral surfaces of basal fourth. F_3 blackish grey on posterodorsal surfaces. F_1 and f_2 have long, erect pile of mainly whitish hairs on posterior surfaces, the pile on f_3 being more adpressed and composed of both blackish and whitish hairs. Tibiae and tarsi yellowish brown, tarsi with darkened apices.

Abdomen. Seen dorsally all tergites appear mat blackish. Greyish orange hind marginal seams occur on all segments and small greyish triangular median spots are often present on posterior margin of tergites 4–7. Lateral parts of tergites (the parts which are invisible in dorsal view) are orange-grey on tergites 1–4, greyish on the rest, and sharply limited from the blackish dorsal areas. Corresponding to this, sternites 1–4 are orange and only slightly tomentose, whereas the rest is greyish. Abdominal pile long and whitish.

Terminalia (Text-figs 441–447). Epandrium and gonocoxites blackish, with both whitish and blackish hairs. Epandrium shaped as shown in Text-fig. 443. Gonocoxite (Text-fig. 441) deeply concave above, lower part projecting. Stylus comparatively slender and S-curved. Ventral lobe narrow and long. Phallic part of aedeagus in lateral view (Text-fig. 444) long, narrow and gradually down-curved. Dorsal apodeme very flat, its distal part down-curved. Seen dorsally (Text-fig. 445) the phallus is very broad proximally and rapidly narrowed. Dorsal apodeme broad, its distal margin slightly incurved. Ventral apodeme short and narrow, and

ejaculatory apodeme forming a short narrow stick. Tergite 8: Text-fig. 446. Sternite 8: Text-fig. 447.

♀. *Head* (Text-fig. 440). Facial index 0·97. Whole frons greyish to greyish brown tomentose, but two lateral triangular areas of dark brownish tomentum on upper frons. These areas bear a very dense and long black pile. Rest of frons with more sparse pile composed of both blackish and whitish hairs. Face, genae and occiput whitish grey tomentose and with pile as in male. Only a few (3–5) post-ocular setae on each side, and below these a similar number of occipital setae. Proboscis, palpi and antennae as in male.

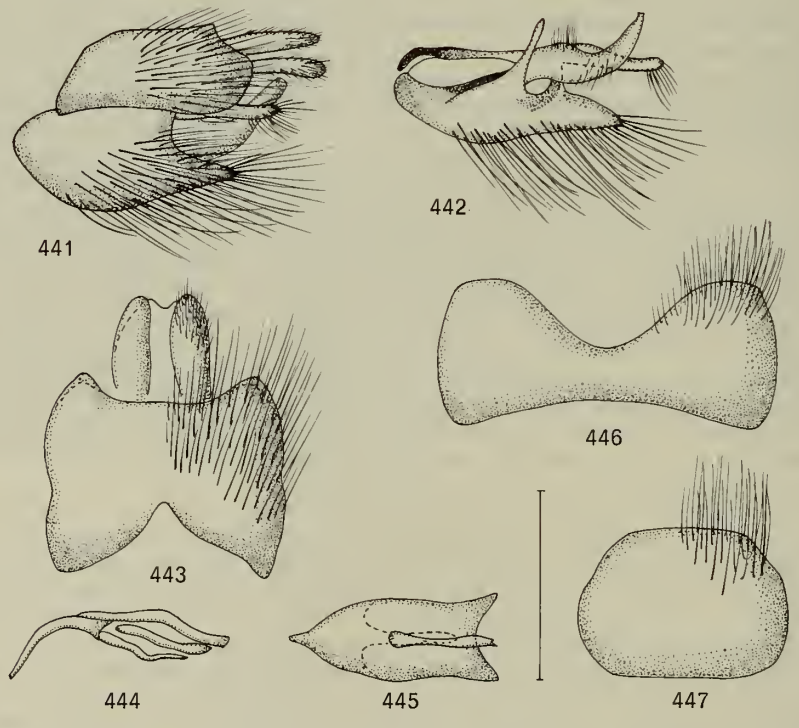
Thorax. Pattern and chaetotaxy as described for male. Pile shorter; whitish hairs on mesonotum adpressed.

Wings. With more distinct dark greyish shadows than in male.

Legs. Almost as described for male, but femora generally less darkened.

Abdomen. Tergites 2–7 with subshining blackish anterior bands, occupying about half or more of tergal length in mid line on the first tergites; towards lateral margin at first dilating, then suddenly constricted before reaching actual lateral margin of tergites. Posterior and lateral parts of the same tergites pale greyish tomentose. Venter greyish orange to greyish brown. Tergal pile moderately long, black on the blackish bands and on lateral areas of first tergites and exclusively on tergites 5–7, whitish and adpressed on greyish bands of tergites 2–4. 6 + 6 terminal spines which are moderately long and bluntly tipped.

Total length 8·6–10·4 mm.



Figs 441–447. Male terminalia of *Caenophthalmus bellus*. 441, genitalia in lateral view; 442, right gonocoxite in intero-ventral view; 443, epandrium in dorsal view; 444, aedeagus in lateral view; 445, aedeagus in dorsal view; 446, tergite 8; 447, sternite 8. Scale: 0·5 mm.

Material examined.

Holotype ♀, South Africa: 'Capland', Stellenbosch, 6.x.1926 (*Dr H. Brauns*) (TM); the type is in a good condition.

South Africa: 'Capland', Stellenbosch, 1 ♂, 20.ix.1918, 3 ♂, 1 ♀, 4.ix.1926 (*Dr H. Brauns*) (TM & ZMC); same locality, 1 ♂, 23.viii.1928 (*L. Kriegler*) (TM); 8 km N. of Nieuwoudtville, 1 ♀ (SAM); W. Cape, Wellington dist., Bainskloof, ca 600 m, 1 ♂, 4–5.x.1959 (*B. & P. Stuckenberg*) (NM).

Caenophthalmus capensis sp. n.

(Text-figs 448–454)

Diagnosis. ♂. As in *bellus* and *irwini* with distinct *dc* setae and tergites largely black, though with more distinct greyish tomentose triangular spots on last tergites. Mesonotum with two very distinct whitish grey stripes which are drop-shaped dilated posteriorly.

♀. See diagnosis of ♀ of *bellus*.

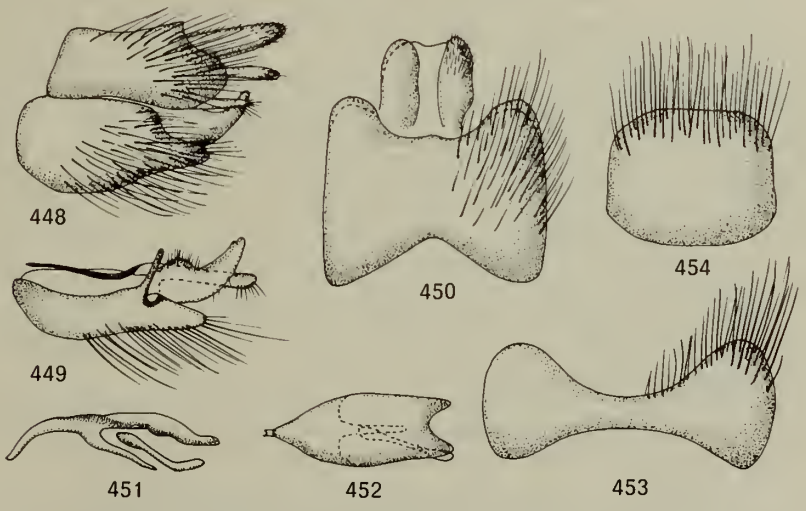
Description. ♂. *Head.* Facial index 0·93. All characters exactly as described above for *bellus*, but dark tuft of hairs on gena less distinct.

Thorax. Whitish grey stripes separating the broad brownish black bands very narrow on anterior two-thirds, drop-shaped dilated posteriorly. Mesonotal and scutellar pile exclusively whitish. 1 *sa* and 1 *dc* setae. Otherwise as in *bellus*.

Wings. Cell M_3 may be open, closed at wing margin or short petiolate. Colour as in *bellus*, but greyish shadows usually less pronounced.

Legs. As described for *bellus*.

Abdomen. Tergites largely black as in *bellus*, but with larger greyish triangular spots placed on posterior margins. These spots are small on tergites 2–3, larger on tergites 4–7, where they occupy half or more of tergal length in mid line. Lateral areas of tergites greyish to greyish



Figs 448–454. Male terminalia of *Caenophthalmus capensis*. 448, genitalia in lateral view; 449, right gonocoxite in intero-ventral view; 450, epandrium in dorsal view; 451, aedeagus in lateral view; 452, aedeagus in dorsal view; 453, tergite 8; 454, sternite 8. Scale: 0·5 mm.

orange, and also greyish orange hindmarginal seams. Sternites greyish orange. Abdominal pile all whitish.

Terminalia (Text-figs. 448–454). Only small differences from *bellus*. Stylus (Text-fig. 449) seems shorter and stouter. Phallic part of aedeagus (Text-fig. 451) is shorter, and aedeagus in dorsal view (Text-fig. 452) narrower.

Total length 7·7–8·5 mm.

♀. Very similar to ♀ of *bellus*, but an overall smaller species. The three specimens available are teneral and therefore a description of the colouration is impossible. Total length from about 7 to about 9 mm.

Material examined.

Holotype ♂, South Africa: Cape Prov., Pearly Beach, Bredasdorp (SAM).

Paratypes. South Africa: same data as holotype, 1 ♀ (SAM); Cape Town, 5 ♂, ix. 1913, 1 ♀, 1913, 1 ♀ without date (*G. Peringuey*) (SAM & ZMC); Cape Prov., Albertinia, 1 ♂, 15.viii.1930 (*R. E. Turner*) (BMNH).

Caenophthalmus irwini sp. n.

Diagnosis. Moderately sized species, up to 9 mm in total length. ♂. Tergites practically entirely black, at most with small greyish tomentose, triangular spots on posterior tergites. *Dc* setae present and eyes touching for a long distance. ♀. *Dc* and 2 pairs of *sc* setae present. Proboscis relatively short, not reaching apex of first antennal segment and mesonotum indistinctly striped.

Description. ♂. *Head.* Facial index 0·97. Eyes touching for a distance equal to twice the height of ocellar triangle. Proboscis reaches to level of antennal bases. Whole head whitish grey tomentose and with mainly long whitish pile; only a narrow strip of black hairs from top of frons down to genae. About 50 long and fine postocular setae on each side. Antenna practically as in the type-species (Text-fig. 440).

Thorax. Mesonotum brownish black, with two narrow and not well-marked greyish brown stripes. Scutellum dark brownish. Pleura greyish. Thoracic pile long and whitish. 1 *sa* seta, 1–2 *dc* setae. 2 pairs of *sc* setae.

Wings. Cell M_3 short petiolate. Vein R_4 gently S-curved. Colour greyish hyaline. Very indistinct darker clouding around cross-veins and fork of R_{4+5}. Stigma black. Anterior veins pale brownish, other veins blackish. Halteres with blackish knobs.

Legs. F_2 with 1 *av* seta. F_3 with 6–8 *av* setae for nearly whole length, some additional *ad* setae and a single *pv* seta near apex. Coxae greyish. Femora usually mostly greyish, but sometimes more or less brownish ventrally on apical part, especially on f_3. Femoral pile mostly whitish, but many black hairs are intermixed at apex of f_3. Tibiae and tarsi as in *bellus*.

Abdomen. Tergites nearly all deep black, but not especially shining. A small brownish grey triangular spot at middle of posterior margin of last tergites, but these spots often very indistinct. Pile long and whitish, bands of shorter and more adpressed hairs occur along posterior margin of all tergites. Venter mainly orange and whitish haired, often more or less greyish tomentose.

Terminalia. These are very similar to the terminalia of *capensis* (Text-figs 448–454). The only difference found lies in the shape of sternite 8. This is distinctly wider and shorter in *irwini* than the nearly square-shaped sternite 8 in *capensis* (cf. Text-fig. 454).

Total length 6·9–8·9 mm.

♀. *Head.* Facial index 0·90. Upper part of frons brownish tomentose, rest of frons and other parts of head greyish to whitish grey tomentose. Proboscis longer than in male. Frons with long pile of blackish hairs, on lower part whitish hairs are intermixed. Face with predominantly whitish hairs. On genae a tuft of long, black hairs. 5–6 postocular setae, and a few occipital setae also present. Antenna as in the male.

Thorax as described for male, but pile shorter and scutellum may have additional lateral setae.

Wings strongly spotted by areas of dark microtrichia, but otherwise as in male.

Legs. Chaetotaxy as in male. Colour of femora nearly uniformly dark brownish, only greyish tomentum on anterior four femora. Femoral pile much darker than in male, and tibial pile blackish on t_1, t_2 and ventrally on t_3, paler on dorsal surface of t_3.

Abdomen. Tergites 2 and 3 with black anterior bands occupying slightly more than half tergal length. These bands nearly parallel-sided. Rest of tergites 2–3 greyish tomentose. Also tergites 4–6 with black anterior bands. These bands are as a whole narrower and are semicircularly widening laterad of mid line, and then suddenly constricted laterally. Posterior parts of these tergites and also tergite 7 greyish or brownish tomentose. Pile mainly pale, but black on the black anterior bands. Sternites brownish grey tomentose. 7 + 7 terminal spines on ovipositor.

Total length 7·4 mm.

MATERIAL EXAMINED.

Holotype ♂, SOUTH AFRICA: Cape Prov., Botterkloof Pass, top of, 700 m, white dune assoc., 3119 6d, 16.viii.1973 (*M. E. Irwin*) (NM).

Paratypes. SOUTH AFRICA: same locality as holotype, 5 ♂, 13.ix.1972, 10 ♂, 1 ♀, 16.viii.1973 (*M. E. Irwin*) (NM & ZMC); Cape Prov., 3 km NNE. of Pakhuis Farm, Pakhuis Mts, 550 m, 3219 Aa, 1 ♂, 14.ix.1972 (*M. E. & B. J. Irwin*) (NM); Pakhuis Pass, east side, 600 m, meadow with flowers, 3219 Aa, 2 ♂, 17.viii.1973 (*M. E. Irwin*) (NM).

Caenophthalmus gracilis sp. n.

(Text-figs 455–459)

DIAGNOSIS. ♂ ♀. Tergites 2–6 with extensive areas of whitish grey tomentum. *Dc* setae absent and only 1 pair of *sc* setae. All femora usually greyish black, f_3 in ♀ often brownish translucent.

DESCRIPTION. ♂. *Head.* Facial index 0·90. Proboscis short, not reaching to level of antennal bases. Head totally whitish grey tomentose and with long whitish pile; only black hairs on a strip from top of frons along eye-margins down to genae. Post-ocular setae long, fine and black, ca 30 on each side. Antennae practically as in *bellus* (Text-fig. 440) but apex of segment 3 longer and more slender, and apical section of style distinctly broader than basal section.

Thorax. Mesonotum with ill-defined pattern of brownish and greyish bands and stripes. Scutellum brownish. Pleura greyish. Thoracic pile long and exclusively whitish. Only 1 *sa* seta. *Dc* setae absent. Only 1 pair of *sc* setae.

Wings. Cell M_3 short petiolate. Vein R_4 with proximal half nearly straight, while distal half is gently curved. Colour greyish hyaline. A very marked blackish stigma present, and an indistinct pattern of spots formed by areas with darker microtrichia in apical half of wing. Veins blackish, but brownish in basal part of wing. Halteres with blackish knobs.

Legs. F_2 with 1 *av* seta. F_3 with 2–6 *av* setae in apical half, 2–3 *ad* setae near apex, and a single *pv* seta near middle. Tibial setae as in *bellus*. Coxae and femora blackish grey tomentose, and with long and exclusively whitish pile. Tibiae yellowish brown with long whitish pile in addition to the black setae. Tarsi yellowish brown with apices of first three segments and last two segments totally black.

Abdomen. Tergite 2 black with posterior third whitish grey tomentose. Tergite 3 as tergite 2, but with broader band of tomentum posteriorly. Tergites 4 and 5 predominantly whitish

grey tomentose, but with a dark median spot and dark lateral spots near anterior margin. Following tergites whitish grey. Venter uniformly brownish grey. Abdominal pile long and exclusively blackish.

Terminalia (Text-figs. 455–459). Compared with terminalia of *bellus* (Text-figs 441–447) smaller. Epandrium (Text-fig. 455) with broader pale postero-lateral flaps. Gonocoxite (Text-fig. 456) lower in lateral view and also stylus (Text-fig. 457) narrower and hardly curved. Phallus shorter in lateral view (Text-fig. 458) and more suddenly constricted when seen in dorsal view (Text-fig. 459). Dorsal apodeme very flat in lateral view (Text-fig. 458) and narrower towards distal margin in dorsal view (Text-fig. 459).

Total length 6·2–6·8 mm.

♀. *Head.* Facial index 0·92. Upper part of frons dark brownish tomentose, lower part of frons and rest of head greyish to whitish grey tomentose. Proboscis longer than in male, reaching beyond level of antennal bases. Frons and face with long pile of both whitish and blackish hairs. Only a few short post-ocular setae. Antenna as in male.

Thorax and *wings* as in male, but wings more strongly spotted.

Legs. Femoral chaetotaxy as in male. Femora, especially f_3, often more or less brownish translucent, and not so distinctly blackish grey as in male. Pile of femora shorter, more sparse and not exclusively whitish. Also tibiae with shorter pile, and the pile composed of both blackish and whitish hairs. Rest as in male.

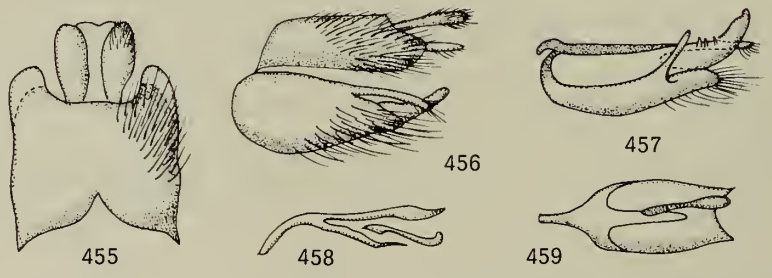
Abdomen. Tergites 2–7 predominantly greyish tomentose, on tergites 2–3 with distinct, black semicircular anterior bands which occupy half tergal length in midline and reach the antero-lateral corners of the tergites. Tergites 4–5 with narrower blackish bands which are slightly broadened laterad of mid line. Tergites 6–7 more diffusely brownish tomentose anteriorly. Venter greyish to brownish grey tomentose. Abdominal pile shorter than in male and includes black hairs on dark tergal bands and on posterior sternites. 6 + 6 terminal spines on ovipositor.

Total length 6·8–7·2 mm.

Material examined.

Holotype ♂, South Africa: Cape Prov., 5 km NE. of Muizenberg, 10 m, coastal dunes, 3418 Ab, 24.viii.1973 (*M. E. Irwin*) (NM).

Paratypes. South Africa: same data as holotype, 8 ♂, 5 ♀ (NM & ZMC); Cape Prov., 21 km S. of Langebaan, 30 m, coastal dunes, 3318 Aa, 2 ♂, 1 ♀, 18.viii.1973 (*M. E. Irwin*) (NM).



Figs 455–459. Male terminalia of *Caenophthalmus gracilis*, holotype. 455, epandrium in dorsal view; 456, genitalia in lateral view; 457, right gonocoxite in intero-ventral view; 458, aedeagus in lateral view; 459, aedeagus in dorsal view. Scale: 0·5 mm.

Caenophthalmus similis sp. n.

Diagnosis. ♂. Tergites 2–6 with whitish grey tomentose bands posteriorly as in *gracilis*, and *dc* setae absent as in this species, but femora extensively yellowish brown in apical half or more, and tibiae more incrassate than in *gracilis*.

♀. Unknown.

Description. ♂. *Head.* Facial index 0·97. Eyes touching for a distance equal to height of ocellar triangle. Proboscis reaches to level of antennal bases. Head whitish grey tomentose. Pile of frons and face long and nearly exclusively whitish, only a few black hairs present on upper part of frons. On genae a tuft of black hairs. Post-ocular setae shorter and fewer in number than in other species of the genus, about 20 setae on each side. Antenna practically as in the type-species (Text-fig. 440).

Thorax. Mesonotum brownish black with two rather well-marked paler greyish stripes. Scutellum brownish black. Pleurae greyish. Thoracic pile moderately long and whitish. Only 1 *sa* setae. *Dc* setae absent. 2 pairs of *sc* setae, sometimes an additional lateral *sc* seta.

Wings. Vein R_4 gently S-curved. Colour greyish hyaline. Very indistinct darker clouding around cross-veins and fork of R_{4+5}. Stigma black. Veins pale brownish in anterior and basal parts of wing, blackish in the rest. Halteres with blackish knobs.

Legs. F_2 with 1 *av* seta. F_3 with 4–5 *av* setae in apical half, and a few *ad* setae near apex. Femora yellowish brown, but basal half of f_1 and f_2 greyish black and also extreme base of f_3 greyish black. Femoral pile whitish and long, black hairs are present at apex of f_3. Tibiae and tarsi yellowish brown, tarsal segments with darkened apices.

Abdomen. Tergites 2–6 with blackish anterior bands, the rest of the tergites being greyish tomentose. The bands of the first tergites are nearly parallel-sided and occupy more than half tergal area, while the bands of the last tergites are semicircularly widened laterad of mid line. Tergal pile all whitish and long. Sternites greyish.

Terminalia. These can hardly be distinguished from those of *gracilis* (cf. Text-figs 455–459). Phallic part of aedeagus probably less suddenly constricted in *similis* than in *gracilis* (Text-fig. 459).

Total length about 7 mm.

♀. Unknown.

Material examined.

Holotype ♂, South Africa: Cape Prov., 5 km E. of Orchard, 500 m, low dunes, 3319 BC, 19.viii.1973 (*M. E. Irwin*) (NM).

Paratypes. South Africa: same data as holotype, 2 ♂ (NM & ZMC).

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Synonyms are in *italics*; principal references are in **bold**.

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